GENERAL INDEX.

Illustrated Subjects are Marked with an Asterisk after the Number of the Page.

A.

"ABBEY" Agricultural Lime Spreader, 89*
— Westminster, Memorial to Sir Charles Parsons, 317, 359; Memorials to Engineers in, 382
Abutments for Railway Bridges, 542
Accelerator, Linear, 10-Million Electron-Volt (Metropolitan-Vickers Electrical Co., Ltd.), 333

Accidents :

Accidents to Merchant Ships, 100
— to Tudor V Aircraft, Report on, 463
Colliery Explosions, Safety in Mines Research Board Report, 14
Explosion in "Viking" Air Liner, Report, 341
Failure of Embankments, Application of Soil Mechanics to, 302, 420
— of Wire Ropes in Mines, 515
Fires in Aircraft, Study of, 442
— Damage to S.S. "Monarch of Bermuda," 152*
— in Domestic Buildings, Causes of, 289
— Research Board, Annual Report, 441
Mining Accidents in United States, 301*
Quarries, Accidents Due to Mechanisation, 568
Road Accidents and Road Construction, 345, 387*
Ships Lost, Lloyd's Statistics, 253, 353, 539
Shipping Accidents and Legislation, 550, 578
— Casualties, 100
Vessels, Lost, Lloyd's Statistics, 253, 353, 539
Accounts and Reports, National Coal Board, 1949, 13. See *Erratum*, 71
Accumulators, Electric. See *Electric*
Acetylene Welding. See *Welding*
Acid Sprayer, Agricultural, "Simplex" (Dorman Simplex Sprayer Co., Ltd.), 89*
Aciéries du Nord, "ADN 130" and "ADN 70" Track-Laying Tractors, 444*
Acoustic Generator, Hartmann, Experiments with, 99*, 136*
Activated Sludge. See *Sewage*
Activation Energy of Recovery in Copper, 373
Adams, L. E., on Torsional Stress in Helical Springs, 40, 135. See LETTERS, 15*, 63
"Adder" Aeroplane Jet Engine, 239*
Address, Presidential. See *Presidential Address*
Adhesive, Synthetic-Resin, Investigations on, 110
Administrative Aspect in Presentation of Technical Information, 260
"ADN 130" and "ADN 70" Track-Laying Tractors, 444*
A.E.C., Ltd., Motor-Coach Chassis with Under-Floor Engine, 343
Aerator and Turner, Agricultural, Smart's (Taskers of Andover (1932), Ltd.), 42*
Aerial Navigation. See *Aeronautics*
— Systems for Radio Beacons, 571
— Transport. See *Aeronautics*
Aerodynamics. See *Aeronautics*
Aeronautical and Automobile Engineering College, Agricultural Engineering Courses, 57, 475
— Society, Royal, Recent Developments in High-Speed Research in Aerodynamics Division of National Physical Laboratory, by J. A. Beavan and D. W. Holder, 21*, 45*; Use of Wind-Tunnel Data in Aerodynamic Design, by R. Hills, 356; Aircraft Metallic Materials Under Low-Temperature Conditions, by Major P. L. Teed, 357; Aircraft Riveting, by H. Giddings, 467; Centrifugal and Axial Compressors for Aircraft Gas Turbines, by Dr. E. S. Moult and H. Pearson, 511; Aircraft Production, by Prof. J. V. Connolly, 539; Rockets and Assisted Take-Off, by A. V. Cleaver, 575*

Aeronautics :

"Adder" Aeroplane Jet Engine, 239*
Aerodynamic Design, Use of Wind-Tunnel Data in, 356
— Research, High-Speed, at National Physical Laboratory, 21*, 45*
— — and Ship Design, 75
Aerofoil, Supersonic Flow Round, Schlierin Photographs of, 45*
Aeronautical and Automobile Engineering College, Chelsea, Course in Agricultural Engineering, 57, 475
— Research, Vibration Testing, Equipment for (de Havilland Propellers, Ltd.), 203*
Aeroplane, Bombing, "Canberra" Mark 2 (English Electric Co., Ltd.), 217*
— — Rocket Assisted Take Off, 577*
— Fighting, "P 1081" (Hawker Aircraft, Ltd.), 217*, 238
— — "Supermarine 535" (Vickers-Armstrongs Ltd.), 238*
— "Ghost-Lancastrian" with Walter Assisted Take-Off Units, 575*
— Night-Fighting "Meteor N.F. 11" (Sir W. G. Armstrong-Whitworth Aircraft Ltd.), 218*

Aeronautics—*continued.*

Aeroplane, Night-Fighting "Venom" (de Havilland Aircraft Co., Ltd.), 239*
— Passenger "Prestwick Pioneer" Mark 2 (Scottish Aviation, Ltd.), 218*
— "Proteus Lincoln" (Bristol Aeroplane Co., Ltd.), 239*
— "Sapphire Meteor" Jet Engined (Armstrong Siddeley Motors, Ltd.), 238*
— Structures, Design of, 257*, 302
— Training, "HPR 2" (Handley Page (Reading), Ltd.), 270*
— — "PR 56" (Percival Aircraft, Ltd.), 270*
Air Liner "Heron" (de Havilland Aircraft Co., Ltd.), 239*
— — "Viking," Explosion in, Report, 341
— — "Viscount 700" (Vickers-Armstrongs Ltd.), 268*
Aircraft, Anti-Submarine, "Fairey 17" (Fairey Aviation Co., Ltd.), 107, 269*
— — Submarine "SB3" (Short Brothers and Harland, Ltd.), 269*
— — Submarine, "YB1" (Blackburn and General Aircraft, Ltd.), 269*
— Automatic Control Systems for, 362*
— Canadian, for De-Icing Research, 178
— Exhibition and Flying Display, Farnborough Aerodrome, 217*, 238*, 268*
— Fires in, Investigations on, 442
— Gas Turbines for, 270, 293*
— — Turbines, Centrifugal and Axial Compressors for, 511
— — Turbines. See also *Turbines, Gas*
— Ground-Attack "Meteor" (Gloster Aircraft Co., Ltd.), 238*
— Materials, Effect of Low Temperatures on, 357
— Military, Freight-Transport "Gal 60" (Blackburn and General Aircraft, Ltd.), 217*
— Production, Factors Affecting, 539
— Research "707 B" (A. V. Roe & Co., Ltd.), 217*, 238
— — "Ashton" (A. V. Roe & Co., Ltd.), 468*
— — and Development Equipment, Fairey Aviation Co., Ltd., 430*
— — "P III" (Boulton Paul Aircraft, Ltd.), 468*
— — "Tay Viscount" (Vickers-Armstrongs Ltd.), 268*
— Royal Air Force, Speed-Up of Servicing, 569
— for Royal Navy, Developments in, 452
— Starting Motors, Hydrogen-Peroxide Fuel Tank for (Avro (Canada), Ltd.), 72
— Structures, Aluminium-Alloy Riveting in, 467
— Tudor V, Accident to, Report on, 463
"Ashton" Research Aircraft, 468*
Beacon, Aerial, in Marine Lights, 477
British Aircraft Constructors' Society's Educational Grants, 58
"Canberra" Mark 2 Bomber (English Electric Co., Ltd.), 217*
Civil Aviation, Ministry of, Report on Explosion in "Viking" Air Liner, 341; Report for 1948-49, 507
College of Aeronautics, Cranfield, Method of Obtaining Stress Distribution in Aircraft Wings, 5; Presentation of Diplomas, 15; General Description, 125*
De-Icing Equipment, Electro-Thermal, for Aircraft, 178
Engine, Aeroplane, Gas-Turbine, 270, 293*
— — Gas-Turbine Combustion in, 230*, 270
— — Jet, "Adder" (Armstrong Siddeley Motors, Ltd.), 239*
— — Jet, "Orenda" (A. V. Roe (Canada), Ltd.), 270*
— — Jet, Rolls-Royce, for Research Ship "Lucy Ashton," 17, 54, 161*, 573*
— — Jet, Rolls-Royce, Thrust-Measuring "Capsule," 573*
— — Jet, "Sapphire" (Armstrong Siddeley Motors, Ltd.), 238*
— — Petrol, Supercharging in, 411, 433*, 481*
— — Tests at College of Aeronautics, Cranfield, 126*
— — See also *Turbines, Gas*
"Fairey 17" Anti-Submarine Aircraft, 107, 269*
Flow, Supersonic, Investigations at National Physical Laboratory, 21*, 45*
Flutter in Aeroplane Structures, 258*, 302
Flying Display and Static Exhibition, Farnborough Aerodrome, 217*, 238*, 268*
"Gal 60" Freight-Transport Military Aircraft, 217*
"Ghost-Lancastrian" Aircraft with Walter Assisted Take-Off Units, 575*
"Heron" Air Liner, 239*
"HPR 2" Training Aeroplane, 270*
"Meteor" Ground-Attack Aircraft, 238*
"Meteor N.F.11" Night-Fighting Aeroplane, 218*

Aeronautics—*continued.*

Motors, Aircraft Starting, Hydrogen-Peroxide Fuel Tanks for (Avro (Canada), Ltd.), 72
Naval Aviation, Developments in, 452
"Orenda" Jet Aeroplane Engine, 270*
"P.III" Research Aircraft, 468*
"PR56" Training Aeroplane, 270*
"Prestwick Pioneer" Mark 2 Passenger Aeroplane, 218*
"Proteus Lincoln" Aeroplane, 239*
Refuelling in Flight Demonstration (Flight Refuelling, Ltd.), 238
Rockets and Assisted Take-Off Units for Aeroplanes, 575*
Royal Aeronautical Establishment, Farnborough, Automatic Monitoring Recorder for Radio Signals, 263
— Air Force, Display, Farnborough, 39; Speed-Up of Servicing Aircraft, 569
"Sapphire Meteor" Aeroplane, Jet-Engined, 238*
"SB3" Anti-Submarine Aircraft, 269*
Signalling, Condenser-Discharge Electric Lamps for, 477
Sprite Take-Off Unit for Aircraft, 577*
"Supermarine 535" Fighting Aeroplane, 238*
Take-Off Units, Walter and Sprite for Aircraft, 575*
"Tay Viscount," Research Aircraft, 268*
Test Chamber, Altitude, for Aircraft, Fairey Aviation Co., Ltd., 432*
Testing Frame for Aircraft Structures, Fairey Aviation Co., Ltd., 430*
Tudor V Aircraft, Accident to, 463
Undercarriage Drop-Test Rig, Fairey Aviation Co., Ltd., 431*
"Venom" Night-Fighting Aeroplane, 239*
"Viking" Air Liner Explosion, Report, 341
"Viscount 700" Air Liner, 268*
Walter Take-Off Units for Aircraft, 575*
Wind Tunnels at College of Aeronautics, Cranfield, 126*
— — Data, Use in Aerodynamic Design, 356
— — Equipment, Fairey Aviation Co., Ltd., 433*
— — High-Speed, at National Physical Laboratory, 21*, 45*
Wings, Aircraft, Method of Obtaining Stress Distribution in, 5
"YB1" Anti-Submarine Aircraft, 269*
See also PARAGRAPH INDEX
Aeroplanes. See *Aeronautics*
Ageing and Stress-Corrosion of Aluminium-Zinc Alloys, 341
Aggregate Handling Plant, Loch Sloy Hydro-Electric Scheme, 3*
Agreements, Labour. See *Labour*
Agricultural Engineer and Farm Mechanisation, 262, 356
— Engineering Course, Aeronautical and Automobile Engineering College, Chelsea, 57, 475
— Machinery, Developments in, 262, 317, 388*. See 356
— — Exhibition and Smithfield Show, Earl's Court, 478*, 510*, 540*
— Motors. See *Engines; Motors; Tractors*
— Society, Royal, Oxford Show, 17*, 41*, 65*, 88*
— Tractors. See *Tractors*
Agriculture. See also PARAGRAPH INDEX
Aids to Navigation, Remote Control of, 570
Air, Compressed. See *Pneumatic*
— Compressors for Aero Gas Turbines, 230*
— — Axial, for 1,070-h.p. Ruston and Hornsby Gas Turbine, 533*. See *Addendum*, 569
— — Blades, Rotary Polishing Machine for (Avro Canada Ltd.), 114*
— — Centrifugal and Axial, for Aircraft Gas Turbines, 511
— — Portable (Consolidated Pneumatic Tool Co., Ltd.), 372*
— — Portable, Petrol-Driven (Broom and Wade, Ltd.), 403*
— — Portable, Single-Tool (Atlas Diesel Co., Ltd.), 452*
— — Stationary (Pneumatic Tool Co., Ltd.), 372*
— — Using Water, for Gas-Turbine Research, 485
— Conditioning and Engineering (N.I.), Ltd., Tiltman Langley Grass Drier, 72
— — of House of Commons, 393*
— Filter, Electrostatics, for House of Commons, 395*
— Flow, Experiments in, 277*, 333
— Force, Royal. See *Aeronautics*
— Pollution. See *Atmospheric; Smoke*
— Supply for Aero Gas Turbines, 230*
— See also *Atmosphere*
Aircraft Establishment, Royal. See *Aeronautics*
— See *Aeronautics*
Alton & Co., Ltd., Stress-Relieving and Pre-Heating of Welded Joints, 392
Akroyd-Hornsby Oil Engines, History of, 415, 450
Aldersley Engineering Co., Ltd., Universal Weeder, 43*
Alexander, R. McK., on Pressure Drop in Cyclone Separators, 63. See LETTER, 354

Alkali Works, Annual Report, 158
Allan, Dr. J. F., on Design of Drifters, 17, 29
Allen, J., & Sons (Oxford), Ltd., Tractor-Operated Shovel, 445*
Allen, Dr. N. P., on Transformation in Iron-Nickel Steels, 492
Allen, W. H., Sons & Co., Ltd., 1,390-kW Pass-Out Turbine for Beckton Gas Works, 346*; 100-kW Diesel-Driven Generator, 527*
Allowances in Machine Work. See *Gauges*
Alloys. See *Metallurgy; Microphotographs*; PARAGRAPH INDEX
Alternators. See *Generators, Electric; Turbo-Generators*
Aluminium Alloys. See *Alloys* under *Metallurgy*
— Cold Riveting of, Developments of, 141*
— Deoxidation of Steel by, 414
— Development Association's Education Service, 183
— Flux-Coated Electrodes for Metal-Arc Welding, Specification, 34
— Use in Hot-Dip Galvanising, 276
Aluminium Laboratories, Ltd., Work on Cold Riveting of Aluminium, 141*
— Polycrystalline, Creep Deformation in, 372
— Strip, Continuous Rolling Mill for, Rogerstone, 265*, 281*, 337*
— Wrought, Tubes, Wire, Bars, Rods and Sections, Specification, 58
— See also *Metallurgy*
America. See *United States*
American Railroads, Association of, Report on Locomotive Construction, 38
— See also *United States*
Amplidyne Control Equipment, for Plate Rolling-Mill Motors (British Thomson-Houston Co., Ltd.), 95*
Amplifying Equipment, Sound, Church House, 562
Anders, E., on Cold Riveting of Aluminium, 141*
Andrew, Prof. J. H., on Effect of Cold Work on Steel, 463
Angle Gauges, Combination, Production of, 417*
Anglo-American Council on Productivity, Report on Electricity Supply, 409; Report on Diesel Locomotive Industry, 479, 567
Anglo-American Oil Co., Ltd., Fawley Oil Refinery, 563*
Annealing. See *Heat Treatment* under *Metallurgy*
Announcing Equipment, Multi-Lingual (General Electric Co., Ltd.), 392*
Annuals and Reference Books, 117, 139, 208, 262, 419, 517, 549. See LITERATURE INDEX
"Any Gas" Incandescent Burner for Beacons, 400
Apparatus, Scientific, Exhibition, Institution of Civil Engineers, 5, 28
— for Study of Flexural Centre of Open Members, 321*
— for Study of Sea-Wave Motion, 160
Appleton, Sir E., on Sun as Emitter of Radio Waves, 443
Appointments. See PARAGRAPH INDEX
Apprenticeship. See *Education; Labour*
Aqueduct, Loch Sloy Hydro-Electric Scheme, 1*, 330
Arc. See *Welding*
Architects, Naval. See *Naval Architects*
Armagh, Ireland, Planetarium for, 63
Armament. See *Guns*
Armstrong Siddeley Motors, Ltd., "Sapphire Meteor" Jet-Engined Aeroplane, 238*; "Adder" Jet-Engined Aeroplane, 239*; 20-b.h.p. Two-Cylinder Diesel Engine, 479*
Armstrong, Sir W. G., Whitworth Aircraft, Ltd., "Meteor N.F. 11" Night-Fighting Aeroplane, 218*
Arnes, H. L., & Co. (Engineering), Ltd., 50-h.p. Track-Laying Diesel Agricultural Tractor, 68*
Arrol, Sir W., & Co., Ltd., Pipe Line for Loch Sloy Hydro-Electric Scheme, 1*, 26*, 49*
Arterial Roads. See *Roads*
Artillery. See *Guns* and PARAGRAPH INDEX
Arts, Royal Society of, Chairman's Address, by E. W. Goodale, on Great Exhibition 1851, 381
Arvida Bridge, Quebec, Cold Riveting of Aluminium on, 141*
Ash Disposal at Power Stations, 54
— Handling Plant, Stourport "B" Power Station (Babcock and Wilcox, Ltd.), 287
"Ashton" Research Aircraft, 468*
Ashwell, D. G., on Pure Bending of Rectangular Plates, 51*, 76*; on Euler Buckling Load of Struts with Crossed Pins, 354. See LETTERS, 112, 160*, 252
Aslib, Annual Conference, Programme, 177; Proceedings, 302; Future Policy, by L. Wilson, 302
Association, British. See *British Association*
— Engineering. See *Institutions*
Astbury, Prof. N. F., on Effect of Core Properties on Defects of Instrument Transformers, 184*
Astronomical Planetarium for Ireland, 63
Ateliers de Charmilles, 36,600-h.p. Francis Hydraulic Turbines, 313*
Atlantic Liners. See *Ships; Steamers; Motorships*

Atlas Diesel Co., Ltd., Single-Tool Portable Air Compressor, 452*
— of Isothermal Transformation Diagrams of En Steels, 491
Atmosphere, Sound and Light Transmission Through, 118*, 477
Atmospheric Pollution from Works, Prevention of, 158
— — See also *Smoke*
— Tower, Fawley Oil Refinery, 563*
Atomic Displacements in Plastically-Deformed Metals, 372
— Pile, Graphite Low-Energy Experimental, at Harwell, 497*
— — Low-Power, International Declassification Conference, 443
Atomisers, Fuel, for Aero Gas Turbines, 230*
Austenite, Isothermal Transformation of, 492
"Austin-Aveling" Diesel-Driven Motor Grader, 401*
Australia, Goulburn River Dam, 382
Authors and Publishers, Relations Between, 237, 279
Autogenous Welding. See *Welds* and *Welding*
Automatic Signalling. See *Signalling*
Automobiles. See *Motor Cars*
Auxiliary Machinery, Marine. See *Marine*
Aveling-Barford, Ltd., Aveling-Austin Diesel-Driven Motor Grader, 401*
Aviation. See *Aeronautics*
Avro (Canada), Ltd., Hydrogen-Peroxide Fuel Tank for Aircraft Starting Motors, 72; Rotary Polishing Machine for Compressor Blades, 114*
Axle Boxes, Use of Tapered-Roller Bearings in, 115. See *Erratum*, 186
— Motor Car. See *Motor-Car Details*
Aylesford Paper Co., Ltd., Paper for "Holoplast" Plastic Panels, 176*
Aytekin, Dr. V., on Flow of Zinc Under Constant Stress, 372

B.

BABCOCK & WILCOX, LTD., Boilers, S.S. "New Australia," 153; Ash-Handling Plant for Stourport "B" Power Station, 287
Bablik, Dr. H., on Wet Galvanising versus Dry Galvanising, 296
Bags and Wrappings, Textile, British Standard Packaging Code, 155
Bailey, R. W., on Thermal Considerations in Heating of Galvanising Baths, 276; Formation of Zinc Ash, Dross and Flux Skimmings from Galvanising Baths, 276
Bainbridge-Bell, L., on Need for Clearer Circuit Diagrams, 237, 260*
Balance, Wind-Tunnel, Fairey Aviation Co., Ltd., 433*
Baler, Agricultural, Self-Propelled "Invicta" (Jones Brothers), 88*
— — Self-Tying "Panther" (Jones Brothers), 89*
Balfour, Beatty & Co., Ltd., Dam for Loch Sloy Hydro-Electric Scheme, 1*, 26*, 330; Loch Fannich Tunnel, 242*
Ball Bearings. See *Bearings*
— Hardness Tests. See *Hardness* under *Tests* (*Materials*)
— Steel, for Brinell Hardness Testing, Specification, 534
Bamford, J. C., Loader for Agricultural Tractor, 67*
Band Conveyors. See *Conveyors*
"Bantam" 2-ton Motor Chassis, 256*
Bars, Wrought Aluminium, Specification, 58
Barbier, Benard and Turenne on Incandescent Burner ("Any Gas") for Beacon Installations, 400; on Aerial Beacons in Marine Lights, 477; on Safety in Coast Lighting, 477
Baron, Y., on High-Voltage Circuit-Breaker Testing in France, 335*
Barr, W., on Metallurgical Trends in Production of Steel Plates, 453
Barrell, H., on Interferometer for Testing Measuring Gauges, 412*. See 244*
Barrow, 2·4-h.p. Petrol-Driven (Winget, Ltd.), 402*
Bastian & Allen, Ltd., Electric Boiler for 2,700-h.p. 3,000-Volt Locomotives, 235*
Baths, Galvanising, Heating and Operation of, 276
Battery. See *Electric*
Battleships. See *Warships*
Beacon Building in Open Sea, 160
— Electric Lamps for, 400
— Lister, Norway, Sound Measurements at, 570
— Navigation, Gases Used as Illuminants in, 274
— Radio, Aerial Systems for, 571
— — for Distance and Direction at Sea, 570
— — and Sound Signals in Finnish Seas, 570
Beam, Prestressed-Concrete, Queen Mary College, 151*
— Rectangular, Pure Bending of, 51
— Slender, Stability and Strength of, 333, 545*
— Steel, Application of Prestressing to, 385
Bearing, Analysis and Lubrication of (Review), 98
— Ball and Roller, Plummer Blocks, Specification, 106
— — and Roller, Specification, 34
— for Heavy-Duty Oil Engines, 31
— Tapered-Roller, Symposium of, 115. See *Erratum*, 186
Beavan, J. A., on Aerodynamic Research at National Physical Laboratory, 21*, 45*
Beckton Gas Works, 1,390-kW Pass-Out Steam Turbine, 346*
Beet Harvester (Johnson's (Engineering), Ltd.), 19*
— — "Peter Standen" (F. A. Standen and Sons (Engineering), Ltd.), 65*
— — with Top Saver (Catchpole Engineering Co., Ltd.), 66*
— Harvesting Machines, 318, 391*
Bell, N., on Radio Aids to Coastal Navigation, 570
Bell, T., 36,600-h.p. Francis Hydraulic Turbine, 313*
Bell Telephone Laboratories, Inc., Researches on Communications Metallurgy, 296
Belt Conveyors. See *Conveyors*
Belting, Rubber, Transmission, Specification, 376
Benard, Barbier and Turenne on Incandescent Burner ("Any Gas") for Beacon Installations, 400; on Aerial Beacons in Marine Lights, 477; on Safety in Coast Lighting, 477
Benard, J., on Gases Used as Illuminants, 274
Bending, Pure, of Rectangular Plates, Experiments on, 51*, 76*
— Tests. See *Tests* (*Materials*)
Benham & Sons, Ltd., Air Conditioning and Heating Plant for House of Commons, 393*
Benjamin Electric Co., Ltd., Lighting Installation for Marine-Engine Shop, 192
Bentall, E. H., & Co., Ltd., "Marvel" Oat Crusher, 478*
Bentham, C., on Wage Structure in Engineering Industry, 383. See 411
Benzole and Coal-Tar Industries, German, Report, 1939-45, 182
Berck Light Tower, France, Reconstruction in Prestressed Concrete, 186
Bessel Functions, Tables of (Review), 322
Beta-Ray Thickness Gauge for Metal Foil, 128
Betti, E., on Principle of Reciprocal Deflection, 197. See LETTERS, 252
Bevel Gears. See *Gears*
Bicycles. See *Cycles*
Binary Alloys. See *Alloys* under *Metallurgy*
Binns, W., Telescopic Gangways for Southampton Docks, 6*
Binomial Probability Distribution, Tables of (Review), 236
Birlec Ltd., 275-kW Continuous Furnace for Copper-Brazing, 551*
Birmingham Museum of Science and Industry, Model of James Watt's "Lap" Engine, 199*
— National Radio Exhibition, 251
— University, Synchrotron at, 96; Advanced Courses in Metallurgy and Mechanical and Chemical Engineering at, 124
Birtley Factory of W. T. Henley's Telegraph Works Co., Ltd., 375*
Bituminous Materials, Road Construction. See *Roads* and *Tar*
"BK-Fifty" Excavator, 369*
Blackburn & General Aircraft, Ltd., "Gal 60" Freight-Transport Military Aircraft, 217*; "YB1" Anti-Submarine Aircraft, 269*
Blade, J. C., on Ageing and Stress-Corrosion of Aluminium-Zinc Alloys, 341
Blading, Gas-Turbine, Determination of Natural Modes of Vibration of, 323*. See LETTERS, 444, 476, 539
— — Turbine, "Nimonic 90," 168
— for Gas Turbines, Production of, 214
Blair, Dr. J. S., on Stresses in Tubes Due to Internal Pressures, 218*. See LETTERS, 383, 412, 476, 508
Blake Jaw Crusher, 72-in. for Copper Mine (Fraser & Chalmers Engineering Works), 73*
Blanch, A. B., & Co., Ltd., "Blanch-Snook" Crop Loader, 510*; Hedge-Cutting Machine, 511*
"Blanch-Snook" Crop Loader, 510*
Blast Furnaces. See *Furnaces*
Blaw-Knox, Ltd., Continuous Loader for Concrete Preparation, 369*; ¼ cub. yd. Diesel-Driven Excavator, with Interchangeable Attachments, 369*
Blears, J., on Leak Detection in Vacuum Systems, 96
"Blenheim," M.S., Launch of, 187*
Blocks, Plummer, Ball and Roller-Bearing, Specification, 106
Board of Trade, Statement on Training Scheme for Canadian Engineering Students, 411; on Shipping Legislation, 550, 578
Boat, Motor. See *Motor Boat*
Bogie for 827-h.p. Diesel-Electric Locomotives, 403*
— for 100-ton Heavy-Duty Trailer, 457*
— Three-Axle, for 2,700-h.p. Electric Locomotive, 233*
Boiler, Babcock & Wilcox, S.S. "New Australia," 153
— Coverings. See *Heat Insulation*
— Electric, for 2,700-h.p. 3,000-Volt Direct-Current Locomotives, 235*
— Feed Pump. See *Pump*
— — Water. See *Feed* and *Water*
— Land, Steel for, Specification, 10
— — Valves and Gauges for, Specification, 106
— Marine, Scotch, Investigation of Tube Corrosion in, 7*
— Plant, Automatic Control Systems for, 362*
— — for Power Stations, 79
— — Stourport "B" Power Station, 286*
— Portable Drilling and Reaming Machine for (Kitchen & Wade, Ltd.), 191*
— for Steam Turbo-Generating Plant, 449*
— Steel Plates for, 453
— Tube-Plate, Drilling Machine (Kitchen & Wade, Ltd.), 191*
— — Specification, 405
— Waste-Heat, East Greenwich Gasworks, 499
— Water-Tube, Foster Wheeler, S.S. "Chusan," 526*
— See also *Engines and Boilers* in PARAGRAPH INDEX
Bombay Meeting, International Association for Hydraulic Research, 135
Bombing Aeroplane. See *Aeroplane* under *Aeronautics*
Books, New, Notes on, 24, 96, 120, 143, 168, 191, 264, 280, 283, 300, 324, 363, 424, 455, 487, 520, 552, 580. See LITERATURE INDEX
— Received, 10, 34, 58, 82, 106, 130, 154, 178, 211, 222, 246, 292, 300, 348, 376, 406, 438, 470, 502, 534, 564
Boring Machine. See *Machine Tools*
Bosanquet, C. H., on Pressure Drop in Cyclone Separators, 354. See LETTER, 63
Boudon, A., on Efficiency of Fresnel Lens of Dioptric Section, 477
Boulton Paul, Aircraft, Ltd., "P.III" Research Aircraft, 468*
Boving & Co., Ltd., 28,700-h.p. Francis Hydraulic Turbine, 493*; 10,000-h.p. Kaplan Hydraulic Turbine, 521*
Bowden, Dr. A. T., on Stationary Gas Turbines, 214*. See 270
Bowen, J. P., on Beacon Building in Open Sea, 160; on Electric Filament Lamps for Lighthouses, 400
Boxes, Telephone, Coin, Design of, 296
Boydell, E., & Co., Ltd., "Muir-Hill" Petrol-Driven Hydraulic Loader, 402*
Braiding Machine for Electric-Cable Manufacture, 375*
Brains, Giant, Machines that Think (Review), 459
Brakes, Motor-Car. See *Motor-Car Details*
Braking, Dynamic, of Alternating-Current Motors, 528*
Brancker, Dr. A. V., on Ingot Heat Conservation, 275
Breakdowns. See *Accidents*
Bricklayers' Arms Junction, Colour-Light Signalling at, 436*
Bridge, Aluminium-Alloy, Over River Tummel, 524
— Arvida, Quebec, Cold Riveting of Aluminium on, 141*
— Concertina, for Tanks, Model of, 5
— Railway, A Century Ago, 205
— — Design of, 465, 509, 542, 571
— — over Grand Surrey Canal, Replacement of, 487*
— Rigid-Frame (Review), 283. See *Erratum*, 573
— and Structural Engineering, International Association for, Papers of (Review), 459
— Suspension, Design of, 237
— Tubular, Britannia, Construction of, 205; Centenary Memorial Tablet, 357*
— — Conway, Construction of, 205
— See also *Viaduct*: and PARAGRAPH INDEX
Bridges, S. N., & Co., Ltd., Micro-Precision Drilling Machine, 488*
Brightside Foundry and Engineering Co., Ltd., Plant for Continuous Rolling Mill, Rogerstone, 266*
Brinell Tests. See *Hardness* under *Tests* (*Materials*)
Bristol Aeroplane Co., Ltd., "Proteus Lincoln" Aeroplane, 239*; Aircraft Riveting Practice of, 467
— University, Investigations on Stability of Slender Beams, 333, 545*
Britain Steamship Co., Design of Cargo Liners for, 30, 64
Britannia Tubular Bridge, Construction of, 205; Centenary Memorial Tablet, 357*
"British Adventurer," Oil Tanker, Launch, 507
— Aircraft Constructors, Society of, Educational Grants, 58; Flying Display and Static Exhibition, Farnborough Aerodrome, 217*, 238*, 268*

British Association:

Birmingham Meeting:
Programme, 111
Exhibition, Energy in Service of Man, 199
Inaugural Proceedings, 202, 236
Presidential Address, by Sir H. Hartley, on Man's Use of Energy, 202, 236, 250

Section G (Engineering):
Reports of Discussions, 237, 270, 302, 309, 333, 356
Presidential Address, by Prof. A. Robertson, on A Chapter in Bridge Building A Century Ago, 205. See 202, 237
Visits and Excursions, 237, 270, 309, 356

Session A:
Presentation of Technical Information:
(*a*) General Survey, by Prof. R. O. Kapp, 228. See 237
(*b*) Need for Clearer Circuit Diagrams, by L. Bainbridge-Bell, 260. See 237
(*c*) Author and Publisher, by G. Parr, 279. See 237
(*d*) A Psychologist's View, by M. D. Vernon, 213. See 237
(*e*) The Administrative Aspect, by F. M. Colebrook, 260. See 237
Bridge Engineering To-day and To-morrow, by Dr. G. Roberts, 237
Aeroplane Structures, by A. E. Russell, 257*. See 302
Recent Developments in Gas Dynamics, by Dr. B. N. Cole, 277*. See 333
Influence of Soil Mechanics on Civil-Engineering Practice, by H. J. B. Harding and Dr. H. Q. Golder, 302, 419
New Harmonic Analyser and Some Applications, by J. G. Henderson, 333
Output Problems in House Building, by Dr. J. Bronowski, 380
Stability and Strength of Slender Beams, by Dr. A. R. Flint, 545*. See 333

Session B:
Some Aspects of Stationary Gas Turbines for Industrial Purposes, by Dr. A. T. Bowden, 214*. See 270
Combustion in Aero Gas Turbines, by Dr. J. S. Clarke, 230. See 270
Farm Mechanisation and Agricultural Engineer, by Prof. E. M'Ewen, 262. See 356
Gas Turbines for Aircraft, by Prof. A. O. Saunders, 293*. See 270.
Work Measurement Research, by D. J. Desmond, 310*. See 309, 351
Future Problems in Farm Mechanisation, by W. H. Cashmore, 317. See 356
Flow-Line Production, by F. G. Woollard, 334, 421. See 309, 351
Progress in Automatic Control Systems, by Prof. A. Tustin, 360*. See 237
Achievements in Farm Mechanisation, by W. J. West, 388*. See 356
Engineering Production, by Prof. T. U. Matthews, 486. See 309, 351
Management Approach to Productivity, by J. J. Gracie, 561. See 309, 351
British Broadcasting Corporation, Work of Engineering Research Department, 81; Cross-Channel Television Broadcast, 202
— Cast Iron Research Association, Extension of Laboratories, 34; Annual Report, 469
— Council, Annual Report, 251

British Electrical Power Convention:

Harrogate Meeting:
Inaugural Proceedings, 4
Dinner, 80
Presidential Address, by Sir V. de Ferranti, on Electricity-Supply Industry, 4
Economics of Electricity Supply, by Sir H. Self, 5, 29
Advances in Lamps and Lighting, by L. J. Davies, 53
Operation of Power Stations, by J. D. Peattie, 53, 79
Boiler Plant—Present and Future, by F. W. Simonson, 79
Large Modern Steam Turbo-Generating Plant, by J. T. Moore, 79
British Electricity Authority, Policy of, 5, 29; Little Barford Power Station, 41; Operation of Power Stations, 53, 79; Leatherhead Research Laboratories, 80*; Uskmouth Power Station, 88; Report on Telephonic and Radio Interference from High-Voltage Systems, 103; Stourport "B" Power Station, 286*. See LETTERS, 383, 508; Clarence Dock Power Station, Liverpool, 381; Standardisation of Steam Turbo-Generating Plant, 449*; Annual Report, 473
British Insulated Callender's Cables, Ltd., Metallurgical Examination of Lead Pressure-Cable Sheaths, 121*
— Intelligence Objectives Sub-Committee Report on German Coal-Tar and Benzole Industries, 1939-45, 182
— Internal-Combustion Engine Research Association, Formula for Stiffness of Crankshafts of Oil Engines, 204*. See *Errata*, 232
— Iron and Steel Research Association, Physics Laboratory, 374*
— Navy. See *H.M.* under *Warships*
British Oxygen Co., Ltd., "Powder Cutting" Machine for Metals, 57*; Oxygen Cutting Machine for Steel Plates, 128*
— Railways, Ocean Liner Terminal Building, Southampton, 6*, 111, 129*; Ministry of Transport's Requirements and Recommendations for (Review), 50; Pneumatic Buffer Stop, 139*; British Transport Commission's Annual Report, 273; Standard Locomotives for, 326; Memorial Tablet, Centenary of Britannia Tubular Bridge, 357*; Multi-Lingual Announcing Equipment at Harwich, 392*; 827-h.p. Mixed-Traffic Diesel-Electric Locomotive, 403*; Inspection Vehicle for Overhead Electric Lines, 423*; Standardisation on, 435, 484; Colour-Light Signalling on Southern Region, 436*; Organisation of Research Department, 475; Research Organisation for, 475, 507; Apprenticeship in, 485; Replacement of Bridge Over Grand Surrey Canal, 487*; Bridge Construction on, 465, 509, 542, 571; Trials of Double-Deck Trains, 517
— Shipbuilding Research Association, Work of, 16, 48*, 54; Hull-Resistance Research Ship "Lucy Ashton," 17, 54, 161*, 573*
— — See *Shipbuilding*
— Shipping. See *Shipping*
— Standards Institution. See *Standards*
British Steel Founders' Association, Dinner, 507
British Tanker Co., Ltd., S.S. "British Adventurer," Launch of, 507
British Thomson-Houston Co., Ltd., Amplidyne Control Equipment for Plate Rolling-Mill Motors, 95*; Electrical Plant for Continuous Rolling Mill, Rogerstone, 265*, 281*, 337*; Investigation on Vibration of Gas-Turbine Blades, 323*. See LETTER, 444, 476, 539; Electrical Equipment for 827-h.p. Diesel-Electric Locomotive, 403*; Communication System for Cement Works, 483; 22,667-kVA Alternator, 495*; Switchgear, Clunie Power Plant, 497*; 850-kW Turbo-Generators, 527*
British Timken, Ltd., Symposium on Tapered-Roller Bearings, 115. See *Erratum*, 186
— Trade. See *Trade*
— Transport Commission, Statement on Integration of Freight Transport by Road and Rail, 133. See LETTER, 183. See 424; Annual Report, 273; Policy of Integration of Freight Services, 424; Research Organisation, 475, 507
British Water Supply Practice, Manual of (Review), 368
— Welding Research Association, Annual Report, 87; Pulsating-Pressure Testing Plant for Pressure Vessels, 384*
Brittle Fracture in Ship Plates, 290*
Bronowski, Dr. J., on Output Problems in House Building, 380
Bronx Engineering Co., Ltd., Seven-Roll Plate Levelling Machine, 562*
Brook, G. B., the Late, 355
Brookhouse Engineering (Southport), Ltd., "President" 8/10-h.p. Agricultural Tractor, 41*
Broom & Wade, Ltd., Portable Petrol-Driven Air Compressor, 403*
Brown, Boveri & Co., Ltd., 30,000-kVA Alternator, 313*; Testing of Air-Blast Circuit Breakers, 365*
Brown Brothers, Ltd., Electro-Hydraulic Steering Gear, S.S. "Chusan," 528*
Brown, D., Tractors, Ltd., "Cropmaster" Agricultural Tractor, with One-Way Plough, 43*; "Cropmaster" Agricultural Tractor, with "Horn-draulic" Loader, 43*
Brown, J., & Co., Ltd., Reconditioning of M.S. "Scythia," 226; Gas-Turbine for Waste-Heat Recovery, 243; 28,700-h.p. Francis Hydraulic Turbine, 493*
Brunel, I. K., Bridge Building by, 206
Brush, Comdr. C. E., on Unattended Lightships in United States, 274
Brussels, International Mechanical Engineering Congress, Programme, 135
Bryan Donkin & Co., Ltd., Turbo-Exhausters for East Greenwich Gasworks, 501
Bryce-Berger Hydraulic Engine Starter (Bryce Fuel Injector, Ltd.), 115*

Bryce Fuel Injector, Ltd., Bryce-Berger Hydraulic Engine Starter, 115*
Bucket Conveyor. See *Conveyor*
Buckling of Slender Beams, Investigations on, 333, 545*
Budapest Underground Railway, 517
Buffer Stop, Pneumatic (G. Turton Platts & Co., Ltd.), 139*
Buildings, Domestic, Causes of Fires in, 289
— Engineering and Utility Services for, Specification, 82
— Fires in, 441
— House, Output Problems in, 380
— Private and Public, Ministry of Works Report, 181
— Research Board, Mounting of Roller-Mirror Extensometer, 172*
— — Congress, London, 1951, Arrangements for, 333
— — Station, Investigations on Soil Mechanics, 302, 420
— Terminal, Ocean, Southampton Docks, 6*, 113, 129*
Bulkheads. See *Water-Tight Subdivision*
Bullen, F. R., Model of Silvertown Factory of Venesta, Ltd., 28
Bunker, Coal, for Coke-Oven Plant, East Greenwich Gasworks, 499*
Bunn, S. C., the Late, 384
Buoys, Navigation, Filling with Propane, 274
— — Gases Used as Illuminants in, 274
Bureau of Mines. See *United States*
— of Standards. See *United States*
Burmeister, U., on Radio Beacons and Sound Signals in Finnish Seas, 570
Burner, Incandescent ("Any Gas"), for Beacons, 400
— Oil Fuel. See *Oil Fuel*
Burns, B. D., on X-Ray Observations on Creep Deformation in Aluminium, 372
Burntisland Shipbuilding Co., Ltd., M.S. "Wadsworth," 303*
Buttress Screw Threads, Specification, 470

C.

CABLE, Submarine, One Hundred Years of, by G. R. M. Garratt, 201. See *Erratum*, 333
— See also *Wire Ropes* and *Electric*
Cabul Tool Co., Ltd., Portable Indentation Hardness Tester, 437*
Caissons, Foundation, for Swedish Lighthouses, 186, 513*
— Sinking at Uskmouth Power Station, 88
Calculating Machines, Automatic Control Systems for, 363
— — International Conference on, Paris, 151
Callipers, Vernier, Specification, 106
Calnan, E. A., on X-Ray Observations on Creep Deformation in Aluminium, 372
Calorifiers at House of Commons, 396*
Cambridge Instrument Co., Ltd., Works of, 41
Cambridge, Pye, Ltd., Works of, 40
— Trinity College, Investigations on Pure Bending of Rectangular Plates, 51*, 76*
— University Engineering Laboratory, Exhibits at Institution of Civil Engineers Conversazione, 28
— — Summer School on Electrical-Resistance Strain-Gauge Methods, 130
Cammell Laird & Co., Ltd., Lighting Installation for Marine-Engine Shop, 192
Campbell, H. S., on Pitting Corrosion in Copper Water Pipes, 291
Canada, Engineering Institute of, Developments in Cold Riveting of Aluminium, by E. Anders and D. G. Elliott, 141*
— Export of Capital Goods to, Guidance on, 157
Canadian Engineering Students, Training Scheme for, Board of Trade Statement, 411
— National Research Council, Investigations on Aircraft De-Icing, 178
— Pacific Railway, St. Luc Marshalling Yard, 559*
Canal, Grand Surrey, Replacement of Railway Bridge Over, 487*
— Roads and Railways, Integration of Freight Services by, 424
— See also PARAGRAPH INDEX
"Canberra" Mark 2 Bombing Aeroplane, 217*
Capacitors. See *Electric*
"Capsule," Thrust-Measuring, for Jet Engines, 573*
Cars, Motor. See *Motor Cars*
Carbon, Effects on Cold Working of Steel, 463
Cargo Steamers. See *Steamers*
Carriage, Drilling, for Tunnels, Tummel-Garry Hydro-Electric Scheme, 460*
— Railway, Double-Deck, Experience with, 517
— — Inspection, for Overhead Electric Lines (Drewry Car Co., Ltd.), 423*
— Standardisation on British Railways, 435, 484
Cashmore, W. H., on Problems in Farm Mechanisation, 317. See 356
Cass Technical Institute. See *Sir John Cass*
Cast-Iron Railway Bridges of a Century Ago, 206
— — Research Association, British, Extension of Laboratories, 34; Annual Report, 469
Casting to Rolling of Ingots, Time Studies, 275
— Solidification of, Review of Literature (Review), 74
— Steel, Continuous, Experiments in, 374
— — — of High-Magnetic Permeability Specification, 34
Catalogues, 24, 72, 83, 120, 144, 192, 232, 278, 295, 312, 316, 364, 456, 488, 519, 552, 579. See PARAGRAPH INDEX
Catchpole Engineering Co., Ltd., Beet Harvester, with Top Saver, 66*
Caterpillar Tractor. See *Tractor*
Cement Works, Communication System for (British Thomson-Houston Co., Ltd.), 483
— — Prevention of Dust Emission from, 158
— See also *Concrete* and PARAGRAPH INDEX
Cementation Co., Ltd., Tunnels for Tummel-Garry Hydro-Electric Scheme, 425*, 460*
Centenary of Britannia Tubular Bridge, 357*
— Glasgow and South Western Railway, 418
— Short Brothers, Ltd., 424
Centenary of W. Sturgeon, 465
— of Submarine Telegraphy, by G. R. M. Garratt, 201. See *Erratum*, 333
Central London Railway, Jubilee of, 91*
"Centurion" Tank, 50-ton, Production of, 325*
Chain-Track Tractor. See *Tractor*
"Challenger Mark II" 80-B.H.P. Crawler Tractor, 17*
Chamber, Combustion, for Aero Gas Turbines, 230*
Chang, Dr. P. L., on Effect of Cold Work on Steel, 463
Change-Speed Gear. See *Gear*
Channel, Television Broadcast Across, 202
Chapman, Brig. O. E., on Development of Tank Design, 474. See LETTER, 569
Charlton, T. M., on Clerk Maxwell and Theory of Indeterminate Structures, 252. See 194*
Charmilles, Ateliers, 36,600-h.p. Francis Hydraulic Turbines, 318*
Chausey Island, France, Study of Wave Motion at, 160
Chelsea, Aeronautical and Automobile Engineering College, Course in Agricultural Engineering, 57, 475
Chemical Engineering, Advanced Courses at Birmingham University, 124
— Factories, Electrical Installations in, 573
— Industry, Automatic Control Systems for, 362
— Research Laboratory, Teddington, Work of, 7*
Chemistry, Uses of High Temperatures in (Review), 459
— See also PARAGRAPH INDEX
Chicago, Institute of Gas Technology, Experiments with Hartmann Acoustic Generator, 99*, 136*
Chippings and Tar on Roads, Adhesion Between 421
Christiani and Nielsen, Ltd., Marine Terminal for Fawley Oil Refinery, 563
Christie, J. D., the Late, 384
Chromium for Communications Apparatus, Extension of Use for, 296
Church House, Sound-Amplifying Equipment, 562
City and Guilds of London Institute, Courses for Laboratory Technicians, 139; Annual Report, 475
Civil Aviation. See *Aeronautics*
— Engineering, Influence of Soil Mechanics on, 302, 419

Civil Engineers, Institution of:

Conversazione and Exhibition, 5, 28
Congress on Building Research, 1951, 333
Presidential Address, by Dr. W. H. Glanville, on Roads of Great Britain, 345*, 387*
Awards of Prizes, 353
Clarence Dock Power Station, Liverpool, 381
Clark, G. (1938), Ltd., 1,125-b.h.p. Eight-Cylinder Marine Oil Engine, 32*
Clarke, Dr. S., on Combustion in Aero Gas Turbines, 230*, 270
Clausen, H., on Machine Tools for Small Gears, 382. See 145*, 169*. See LETTERS, 252, 291, 331, 354
Cleaning of Coal, Progress in, 14. See *Erratum*, 71
Cleaver, A. V., on Rockets and Assisted Take-off, 575*
Cleveland Ledge Light Station, 138
— and Northern Counties, Notes from, 11, 35, 59, 83, 107, 131, 155, 179, 247, 327, 349, 377, 407, 439, 470, 503, 535, 565. See PARAGRAPH INDEX
Climate. See *Meteorological*
Clunie Hydro-Electric Plant, 425*, 460*, 493*
Coaches, Railway. See *Carriages*
— Road-Motor, Semi-Trailer, "Dyson-Express," for Passenger Transport, 162*
Coal Board, National, on Plan for Coal, 381, 410
— Bunker for Coke-Oven Plant, East Greenwich Gasworks, 499*
— Burning in Gas Turbines, 215
— Cleaning Plants, Progress with, 14. See *Erratum*, 71
— Dust Explosions in Collieries, Investigations on, 14
— for Electric Power Stations, 53, 79
— Gas. See *Gas*
— Handling Plant, Stourport "B" Power Station, 286
— Industry, National Coal Board's Report for 1949, 13. See *Erratum*, 71
— — Statistics for 1948 and 1949, 379
— Mine. See *Colliery*
— Pulverised. See *Colloidal Fuel*
— Situation, Government Statement, 381, 410
— Tar and Benzole Industries, German, Report, 1939-45, 162
— See also PARAGRAPH INDEX
Coaling Plant for Locomotives, St. Luc Marshalling Yard, 554*
Coast Guard, United States, Radio-Telephone Calling Devices for, 570
— Lights and Fog Signals in Sweden, 477
— Lighting, Safety in, 477
Coating, Vacuum Industrial Applications of, 96
Cockcroft, Prof. Sir J., on Development of Power from Nuclear Energy, 225
Codes of Practice, Standard. See *Standards*
Coiler, Three-Roll, Rogerstone Aluminium-Strip Rolling Mill (Wellman Smith Owen Engineering Corporation, Ltd.), 282*
Coin Boxes, Telephone, Design of, 296
Coke-Oven Plant, East Greenwich Gasworks, 475, 499*
Cold Working of Steel, Effects of, 463
Cole, Dr. B. N., on Scale Analysis of Compressible-Gas Flow, 113*; on Developments in Gas Dynamics, 277*. See 333
Colebrook, F. M., on Administration Aspect of Presentation of Technical Information, 237, 260
College of Aeronautics, Cranfield, Method of Obtaining Stress Distribution in Aircraft Wings, 5; Presentation of Diplomas, 15; General Description, 125*
— See also *Education*
Colliery, Kingsbury, 2,500-kW Mixed-Pressure Turbine Plant, 243*
— National Coal Board's Report, 1949, 13. See *Erratum*, 71
— Safety in Mines Research Report, 1948, 14
— United States, Safety Regulations in, 301
— Winding. See *Winding*
— Wire Ropes in, Conference on, 515
— See also *Mines* and *Coal*
Colloidal Fuel, Work of Fuel Research Board on, 505
Columns. See *Struts*
Colwood, 1·2-h.p. Petrol-Driven Garden Tractor, 19*
Combustion in Aero Gas Turbines, 230*, 270
— Chamber for 1,070-h.p. Ruston and Hornsby Gas Turbine, 533*. See *Addendum*, 569
— See also *Fuel*; *Gases*
Commerce. See *Trade*. See also *Industries and Commerce* in PARAGRAPH INDEX
Commercial Aviation. See *Aeronautics*
— Motor Cars. See *Motor*
Commonwealth. See *Australia*
Communication System for Cement Works, 483
Commutator-Turning Machine (Murad Developments, Ltd.), 466*
Companies. See PARAGRAPH INDEX
Compound Locomotives. See *Locomotives*
Compressed Air. See *Pneumatic*
Compressing Plant, Graphical Symbols for, Specification, 470
Compressor, Air. See *Air Compressor*
Concrete Dam, Arched-Buttress, Loch Sloy Hydro-Electric Scheme, 1*, 330
— Mixer, Tractor-Mounted (Tamkin Brothers & Co., Ltd.), 445*
— "No-Fines," Strength of, 398*
— Pre-Cast, Kerbs, Channels and Edgings, Specification, 470
— Prestressed, Use in Berck Lighthouse, 186
— — Use in Queen Mary College Buildings, 151*
— — Use in Railway Bridges, 542
— Railway Bridges, Design of, 465, 509, 542, 571
— Reinforced, Railway Bridges, Design of, 465, 509, 542, 571
— — Caissons for Swedish Lighthouses, 186, 513*
— — Use in Italian Lighthouses, 186
— See also PARAGRAPH INDEX
Condenser, Marine, S.S. "Chusan," 526*
— Plant, Stourport "B" Power Station, 287*
— Tubes, Investigations on Corrosion in, 291
Condensing Plant for Electric Power Stations, 449*
Conference, Electricity as Aid to Productivity, 412
— and Exhibitions, Forthcoming, 91, 187, 271, 316, 415, 573
— and Exhibition, Vacuum Physics, 95
— International, on Calculating Machines, Paris, 151
— — Declassification, on Atomic Energy, 443
— — on Heat Transfer, 1951, Arrangements, 226
— — on High-Tension Networks, Paris. See *High-Tension Networks*
— — on Hot-Dip Galvanising, Copenhagen. See *Galvanising, Hot-Dip, International Conference, Copenhagen*
— — Lighthouse, Paris. See *Lighthouse Conference, International, Paris*.
— — on Safety of Life at Sea, 551, 578
— — on Physical Aspects of Lubrication, 39
— Power, World. See *World Power Conference*
— on Wind Power and Electricity Supply, 381
— Wire Ropes in Mines, 515
Congress on Building Research, London, 1951, Arrangements for, 333
— and Exhibition, Public Works and Municipal Services. See *Public Works and Municipal Services Congress and Exhibition*
— International, Internal-Combustion Engine Paris, 1951, Arrangements, 438
— — Mechanical Engineering, Brussels, Programme, 135
— — on Radiology, London, 87
— — Railway, Rome. See *Railway Congress, International, Rome*
— — Union of Electricity Producers and Distributors, 1949, 87
Connolly, Prof. J. V., on Aircraft Production, 539
Conservation of Coal. See *Coal*; *Fuel*
Consett Iron Co., Ltd., Ore-Discharging Plant, Tyne Dock, 159; 300-b.h.p. Diesel-Engined Locomotive for Steelworks, 467*
Consolidated Pneumatic Tool Co., Ltd., Portable Air Compressor, 372*; Stationary Air Compressor, 372*
Consulting Engineers, Association of, Annual Report, 159
Contracts, 11, 35, 59, 107, 131, 164, 223, 256, 348, 376, 406, 438, 470, 502, 534, 564. See PARAGRAPH INDEX
Contractors' Plant: Its Organisation, Operation and Maintenance (Review), 149
Control Apparatus for 827-h.p. Diesel-Electric Locomotives, 404*
— Equipment, Amplidyne, for Plate Rolling-Mill Motors (British Thomson-Houston Co., Ltd.), 95*
Control Gear for 1,500-Volt Direct-Current Locomotive, 212*
— — for 2,700-h.p. 3,000-volt Direct-Current Locomotive, 233*
— Orders, Ministry of Supply. See *Industries and Commerce* in PARAGRAPH INDEX
— Room, Clunie Hydro-Electric Plant, 496*
— — of House of Commons, 395*
— Systems, Automatic, Progress in, 237, 360*
— Tower, Clunie Hydro-Electric Plant, 425*
— — for St. Luc Railway Marshalling Yard, 554*
Controllers, Electric Motor. See *Motors, Electric*
Conveyor Plant, Loch Sloy Hydro-Electric Scheme, 3*
Conway Tubular Bridge, Construction of, 205
Cook, Prof. G., on Higher Technological Training, 419
Cooling Towers, Precipitation of "Drizzle" from, 158
Coombes, J. E. M., on Self-Balancing Instruments for Process Industries, 297*
Copenhagen, International Conference on Hot-Dip Galvanising. See *Galvanising, Hot-Dip, International Conference, Copenhagen*
Copper, Activation Energy of Recovery in, 373
— Alloys. See *Alloys* under *Metallurgy*
— Brazing, 275-kW Continuous Furnace for (Birlec Ltd.), 551*
— Mine, 72-in. Blake Jaw Crusher for (Fraser and Chalmers Engineering Works), 73*
— Water Tubes, Corrosion in, 291
— See also *Metallurgy*
Core Properties, Effects on Defects of Instrument Transformers, 184*
Corrosion in Gas Turbines, 215
— Resistance of Galvanised Window Frames, 276
— in Sea-Water Pipe Systems, 291
— Stress, of Aluminium Alloys, 341
— in Tubes of Scotch Marine Boiler, Laboratory Tests, 7*
— of Wire Ropes in Mines, 515
Cory, E., on Recollections of Royal Institution 411
Cost and Works Accountants, Institute of, Survey of Work Measurement, 251
Costain Concrete Co., Prestressed-Concrete Floors for Queen Mary College, 151*
Cottrell, Prof. A. H., on Flow of Zinc Under Constant Stress, 372
Coverings, Non-Conducting. See *Heat Insulating Materials*
Cowan, H. J., on Strength of "No-Fines" Concrete, 398*
Cox, H. L., on Euler Buckling Load of Struts with Crossed Pins, 252. See LETTERS, 112, 160*, 354
Cracking Unit for Oil, Fawley Refinery, 563*
Crane. See *Hoists*; *Transporters*
Cranfield College of Aeronautics, Method of Obtaining Stress Distribution in Aircraft Wings, 5; Presentation of Diplomas, 15; General Description, 125*
Crankshaft, Fatigue-Strength of, Investigations on, 9*
— Oil Engine, Formula for Stiffness of, 204*. See *Errata*, 232
Creep Due to Fluctuating Stresses at Elevated Temperatures, 180*
— and Plastic Deformation in Metals, 372
— Tests. See under *Tests* (*Materials*)
Crittall, R., Marine, Ltd., Ventilation System, S.S. "New Australia," 154
Crop Loader, "Blanch-Snook" (A. B. Blanch & Co., Ltd.), 510*
"Cropmaster" Agricultural Tractor, with "Horn-draulic" Loader, 43*; with One-Way Plough, 43*
Cross-Channel Television Broadcast, 202
Crossley Motors, Ltd., Mark IV Chassis for Motor Omnibus, 343*
Crown, J. & Sons, Ltd., Motor Collier "Portsmouth," 32*
Crude-Oil Engines. See *Engines, Oil*
— — Unit and Vacuum Tower, Fawley Refinery, 563*
Crusher, Blake Jaw, 72-in., for Copper Mine (Fraser & Chalmers Engineering Works), 73*
— Oat, "Marvel" (E. H. Bentall & Co., Ltd.), 478*
Cryptography, Scientific, 444
Crystalline Structure of Metals. See *Microphotographs*
Cultivators, Rotary, Tractor-Mounted, Developments in Design, 390*
— — Tractor-Mounted (Rotary Hoes, Ltd.), 478*
Cunard-White Star, Ltd., Reconditioning of M.S. "Scythia," 226
Cunningham, Dr. B., the Late, 111
Current Events, Reports, Held up by Printing Dispute, 317
Cuthbertson, J. A., Ltd., Tile-Drainage Machine, 20*
Cutting Machine, Oxygen, for Steel Plates (British Oxygen Co., Ltd.), 128*
— — "Powder," for Metals (British Oxygen Co., Ltd.), 57*
Cycles, Heat, for Gas Turbines, 214*
— Threads, Specification, 246
Cyclone Separators, Pressure Drop in, 63. See LETTER, 354
Cylinder, Built-Up, Residual Contact Stresses in, 464*

D.

D'AETH, H. N., on Training of Mechanical Engineers, 413
Dam, Concrete, Arched-Buttress, Loch Sloy Hydro-Electric Scheme, 1*, 330
— — Tummel-Garry Hydro-Electric Scheme, 425*, 521*
— — for Wassen Hydro-Electric Scheme, 305*
— Earth, Design, and Soil Mechanics, 302, 419
— — on Goulburn River, Victoria, Australia, 382
— Göschenenreuss, Wassen Hydro-Electric Scheme, 305*
Daniels, T. H. & J., Ltd., Hydraulic Mechanism for Telescopic Gangways, 6*; Apprenticeship Scheme of, 418
Dashwood Engineering, Ltd., Colwood 1·2-h.p. Petrol-Driven Garden Tractor, 19*
Davey, Paxman & Co., Ltd., 827-h.p. Diesel-Electric Locomotive, 403*
Davidson, Major-Gen. A. E., on Early Akroyd Oil Engines, 415, 450
Davidson, W. F., on Nuclear Energy for Power Production, 225
Davies, L. J., on Advances in Electric Lamps and Lighting, 53
Davis, E., on Pressure Welding of Copper-Base Alloys, 399
Davis, Stuart, Ltd., Tube-Straightening Machine, 579*
Davison, A. E., on Mechanisation of Transmission-Line Construction, 261*
Davy & United Engineering Co., Ltd., Plant for Continuous Rolling Mill, Rogerstone, 337*

Decks, Water-Tight. See *Water-Tight Subdivision*
Declassification Conference, International, on Atomic Energy, 443
de Ferranti, Sir V., on Electricity Supply Industry, 4
Deflection in Britannia and Conway Tubular Bridges, 206
Deformation, High-Speed, of Steel, Effect of, 463
— Plastic, in Metals, 372
de Havilland Aircraft Co., Ltd., "Heron" Air Liner, 239*; Night-Fighting "Venom" Aeroplane, 239*; "Sprite" Take-Off Unit for Aeroplanes, 577*
de Havilland Propellers, Ltd., Vibration-Testing Equipment for Aeronautical Research, 203*
Denco Engineering Services, Ltd., Constant-Level Oiler, 24*
Dennis Brothers, Ltd., "F.8" Limousine-Type Fire Appliance, 343*
Denny-Brown Stabilising Gear, S.S. "Chusan," 489, 557*
Denny, Sir M., on Work of British Shipbuilding Research Association, 43, 54. See 16
Denny, W., & Brothers, Ltd., Conversion of Hull-Resistance Research Ship "Lucy Ashton," 17, 54, 161*, 573*
Deoxidation of Iron and Steel, 414
Desert Water Resources, Search for, 569
Desmond, D. J., on Work Measurement Research, 310*. See 309, 351
Dewsnap, N., on Atomic Displacements in Plastically-Deformed Metals, 372
Diagrams, Circuit, Need for Greater Clearness, 237, 260*
— Isothermal Transformation, of En Steels, Atlas of 491
Dies, Screwing, Circular, Specification, 405
— Wiredrawing, Profilometer for, 374*
Diesel Engines. See *Engines, Oil, Diesel; Marine Propulsion*
Diesel Engine Users Association, Presidential Address by Major-Gen. A. E. Davidson on Early Akroyd Oil Engines, 415, 450
Differential Gear. See *Gear*
Diffusion, Gaseous, Process, Engineering Developments in (Review), 397
Digger, Post-Hole (H. Ferguson, Ltd.), 42*
— — Hole (Transplanters (Robot), Ltd.), 451*
— See also *Excavator*
Directories. See LITERATURE INDEX
Discharging Plant, Iron-Ore, Tyne Dock, 159
Disputes, Trade. See *Labour*
Docks, Southampton, Ocean Terminal Building, 6*, 111, 129*; Telescopic Gangways for (Structural & Mechanical Development Engineers, Ltd.), 6*, 130
— Tyne, Iron-Ore-Discharging Plant, 159
Dollar Exports Board, Guidance on Dollar Sales of Capital Goods, 157
Domestic Buildings, Fires in, Causes of, 289
Dominion Bridge Co., Ltd., Investigation on Cold Riveting of Aluminium, 141*
Donald, A., on Distribution of Temperature in Ingot Moulds, 275
Doors, Water-Tight. See *Water-Tight Subdivision*
Dorman Long & Co., Ltd., Amplidyne Control Equipment for Plate Rolling-Mill Motors, 95*; Stourport "B" Power Station, 286*. See LETTERS, 383, 508
Dorman Simplex Sprayer Co., Ltd., "Simplex" Agricultural Acid Sprayer, 89*
Double Reduction Gears, Marine. See *Marine Propulsion*
Dove Brothers, Ltd., New Building at Queen Mary College, 151*
"Dragon" 40-h.p. Diesel-Engined Crawler Tractor, 540*
Drewry Car Co., Ltd., Inspection Vehicle for Overhead Electric-Line Equipment, 423*
Drier, Grass (Heenan & Froude, Ltd.), 90*
— — Mark I (Templewood Engineering Co., Ltd.), 89*
— — Portable (Tiltman Langley Laboratories, Ltd.), 72
Drifters, Research on Design of, 29
Drills and Drilling Machines. See *Machine Tools*
— Grain, 13-Row (H. Ferguson, Ltd.), 42*
Drilling Carriage for Tunnels, Tummel-Garry Hydro-Electric Scheme, 460*
Drum Gates, Clunie Dam, 427*
Drury, F. E., the Late, 413
Drying Plant for Grain in Sacks, 391*
Ducts, Ventilation, in House of Commons, 395*
Dump Motor Truck, 15-cwt. (Road Machines (Drayton), Ltd.), 444*
Dust, Coal, Explosions of. See *Coal Dust*
— Emission from Works, Prevention of, 158
Dynamics, Gas, Developments in, 277*, 333
Dynamos. See *Generators, Electric; Turbo-Generators*
Dyson, R. A., & Co., Ltd., Semi-Trailer Coach for Passenger Transport, 162*; 70-ton Heavy-Duty Trailer, 283*; 100-ton Heavy-Duty Trailer, 457*

E.

EARL'S COURT. See *Exhibition*
Earley, C. C., on Transformation in Iron-Nickel Steels, 492
Earth Dam Design and Soil Mechanics, 302, 419
— Pressure Recorders, 5
— Waves (Review), 397
Easson, E. B., on Power Developments in Ontario, 112
East Greenwich Gas Works, Coke-Oven Plant at, 475, 490*
East Lancashire Paper Mill Co., Ltd., 4,000-kW Pass-Out Steam Turbine, 209*
Eatough, C., on Experiences with Tapping, 507
Economics, Industrial. See *Labour*
— of Industrial Research, Survey of, 85
— Railway. See *Railway*
Economy, Fuel. See *Fuel*
Edison Swan Electric Co., Ltd., Microfilm Readers, 364*
Edmonds, R., on Model Investigation of Ventilation System for House of Commons, 165*
Education :
Aeronautical and Automobile Engineering College, Chelsea, Course in Agricultural Engineering, 57, 475
Aluminium Development Association's Education Service, 183
Apprenticeship Scheme of T. H. & J. Daniels, Ltd., 418
Birmingham University, Advanced Courses in Metallurgy and Mechanical and Chemical Engineering, 124
Board of Trade Statement on Training Scheme for Canadian Engineering Students, 411
British Aircraft Constructors' Society's Educational Grants, 58
Cambridge University Engineering Laboratory, Exhibits at Institution of Civil Engineers Conversazione, 28
— — Summer School on Electrical-Resistance Strain-Gauge Methods, 130
City and Guilds of London Institute, Courses for Laboratory Technicians, 139; Annual Report, 475
College of Aeronautics, Cranfield, Method of Obtaining Stress Distribution in Aircraft Wings, 5; Presentation of Diplomas, 15; General Description, 125*
Daniels, T. H. & J., Ltd., Apprenticeship Scheme, 418
Education, Ministry of, Plan for Training Technical Teachers, 539
Electrical Technicians, Report on Educational and Training Schemes for, 443
Faraday House Old Students' Association, Annual Dinner, 397
Imperial College of Science and Technology, Instruction in Applied Optics, 82
International Association for Exchange of Technical Students, Annual Report, 382
London and Home Counties, Engineering Education in, Pamphlet on, 109
Manchester College of Technology, Mechanical Engineering Laboratories, Opening of, 475
— and District, Booklet on Electrical and Mechanical Engineering Lectures, 216. See LETTER, 354
Metallurgical Education, Joint Committee's Report on, 353
Metropolitan-Vickers Electrical Co., Ltd., Engineering Courses for Educationists, 82
National Foundry College, Courses at, 359
Northampton Polytechnic, London, Evening Courses for Engineers, 247; Apparatus for Study of Flexural Centre of Open Members, 321*
Nottingham University, Refresher Courses for Works and Plant Engineers, 139
Polish University College, London, Mechanical Engineering Department, 464
Queen Mary College, London, New Buildings for, 151*
Refresher Courses for Foremen, 357
Sir John Cass College, London, Courses at, 251, 499
Schofield Travel Scholarships, First Awards, 246
South East London Technical College, Courses in Electrical Engineering, 252
Technological Education and Its Future, by Sir R. Southwell, 537
— — Higher, Future Development of, Report on, 381, 537
Training of Agricultural Engineers, 263
— of Mechanical Engineers, 413
United States Educational Commission, Travel Grants by, 443
Universities and Higher Technological Training, 419
See also PARAGRAPH INDEX
Educationists, Engineering Courses for, Metropolitan-Vickers Electrical Co., Ltd., 82
Edwards, F. J., Ltd., 72-in. Precision Shearing Machine, 144*
Effluents, Factory, Pollution of Rivers by, 506
Ejectors, Flow of Gas in, 277*, 333
Electric :
Accelerator, Linear, 10-Million Electron-Volt (Metropolitan-Vickers Electrical Co., Ltd.), 333
Accumulators for Navigation Lights, 274
Alternator. See *Generator* and *Turbo*
Arc Welding. See *Welding*
Battery. See *Accumulator* (above)
— for Navigation Lights, 274
British Electrical Power Convention. See *British Electrical Power Convention*
— Electricity Authority, Policy of, 5, 29; Little Barford Power Station, 41; Operation of Power Stations, 53, 79; Leatherhead Research Laboratories, 80*; Uskmouth Power Station, 88; Report on Telephonic and Radio Interference from High-Voltage Systems, 103; Stourport "B" Power Station, 286*. See LETTERS, 383, 508; Clarence Dock Power Station, Liverpool, 381; Standardisation of Steam Turbo-Generating Plant, 449*; Annual Report, 473
Cable, Extra High-Voltage, Developments in France, 310*
— Factory, Birtley, of W. T. Henley's Telegraph Works Co., Ltd., 375*
— Sheaths, Lead and Lead-Alloy, Metallurgical Examination of, 121*
— Sheathing, Researches on, 296
Capacitors, Industrial, for Power Frequency Systems, Specification, 246
Circuit Diagrams, Need for Greater Clearness, 237, 260*
Commutator-Turning Machine (Murad Developments, Ltd.), 466*
Contacts, Telephone, Erosion of, 296
Dynamo. See *Generator; Turbo-Generator*
Electric Systems, Large, International Conference. See *High-Tension Networks*
Electric—*continued.*
Electrical Apparatus, Fires from, 441
— Appliances, Domestic, as Causes of Fires, 289
— Installations in Large Chemical Factories, 573
— Resistance Strain-Gauge Methods, Cambridge University Summer School, 130
— Testing by National Bureau of Standards, 102
Electricity Producers and Distributors, International Union of, Report of Congress, 1949, 87
— Supply, Productivity Report on, 409
Electrodes, Aluminium, for Metal-Arc Welding, Specification, 34
Electronic Circuit Diagrams, Need for Greater Clearness, 237, 260*
Electronics Symposium and Exhibition, Programme, 135
Electro-Thermal De-Icing Equipment for Aircraft, 178
Equipment Manufacturing, Research and Development in, 543
Furnaces. See *Furnaces*
Generating Stations. See *Power Stations*
Generator. See *Generator* and *Turbo*
High-Voltage Laboratory, British Electricity Authority, 80*
Hydro-Electric Power Plants. See *Power Plants*
Ignition for Internal Combustion Engines. See *Ignition*
Impedance-Testing Set for Valves at High Frequencies (Mullard Electronic Products, Ltd.), 56*
Induction Furnace. See *Furnace*
— Motors. See *Motors, Electric*
Lamps, Advances in, 53
— Condenser-Discharge, for Naval and Aeronautical Signalling, 477
— for Lighthouses, 400
Lighting, Advances in, 53
— Installation for Marine-Engine Shop (Benjamin Electric Co., Ltd.), 192
Locomotives. See *Locomotives, Electric*
Machines. See *Generators; Motors; Turbo*
Magnetos. See *Ignition*
Mains. See *Cables* (above)
Motors. See *Motors, Electric*
Oil Switch. See *Switchgear*
Potentiometer, Direct-Current Self-Balancing, 297*
Power. See *Power*
— Stations. See *Power Stations*
Productivity, Electricity as Aid to, 412
Railways. See *Railways*
Rays. See *X-Rays*
Resistance Welding. See *Welding*
Resistivity of Steel, Effect of Cold Working on, 463
Rolling Mills, Electric Driving of. See *Rolling Mills*
Röntgen Rays. See *X-Rays*
Schering Bridge, 200-kV, for High-Voltage Laboratory (Salford Electrical Instruments, Ltd.), 208*. See *Erratum*, 263
Ship Propulsion. See *Marine Propulsion*
Storage Battery. See *Accumulator* (above)
Substation. See *Substation*
Switchgear. See *Switchgear*
Telegraphy. See *Telegraphy*
Telephony. See *Telephony*
Traction. See *Locomotives, Electric; Trolley 'Bus; Railways*
Transformers. See *Transformers*
Turbo-Generators. See *Turbo-Generators*
Vacuum Tubes. See *Röntgen*
Voltage Regulators, Automatic, 362*
Welding. See *Welding*
Winding Gear. See *Winding*
Wireless Telegraphy. See *Radar; Radio; Television*
— Telephony. See *Radar; Radio; Television*
See also PARAGRAPH INDEX
Electrical Engineers, Institution of :
Summer Meeting, Cambridge, 40
Ballot for Officers and Awards of Premiums, 63
Election of Prof. E. W. Marchant as Honorary Member, 331
Presidential Address, by Sir A. J. Gill, on Telephonic Developments, 331, 352
Conference on Electricity as Aid to Productivity, 412
Benevolent Fund Appeal, 443
Report on Education and Training of Electrical Technicians, 443
History of North-Western Centre (Review), 524
Supply Section :
Research and Development in Manufacture of Electrical Equipment, by S. E. Goodall, 543
Utilisation Section :
Efficiency of Electrical Power Utilisation, by A. N. Irens, 552
Electrical Installations in Large Chemical Factories, by D. B. Hogg, 573
Electrical-Manufacturing Industry, Research and Development in, 543
Electricity Producers and Distributors, International Union of, Report of Congress, 1949, 87
Electrodes, Aluminium, for Metal-Arc Welding, Specification, 34
Electronic Circuit Diagrams, Need for Greater Clearness, 237, 260*
Electronics Symposium and Exhibition, Programme, 135
Electro-Watt Co., Wassen Hydro-Electric Scheme, 305*, 313*
Elliott, D. G., on Cold Riveting of Aluminium, 141*
Elliptic Functions, Normal (Review), 168. See LETTER, 412
"Elstree" 44-b.h.p. Heating and Planing Machine for Roads, 371*
Embankment Design and Soil Mechanics, 302, 419
Employees. See *Labour*
Employment. See *Labour*
Energy, Man's Use of, 202, 236, 250
Enfield Technical College, Investigations on Pure Bending of Rectangular Plates, 51*, 76*
Engines, Aero. See *Aeronautics*
— Diesel. See *Engines, Oil, Diesel; Marine Propulsion; Motorships*
— Fire. See *Fire Appliance*
— Internal-Combustion, Use in Army, 415, 450
— — Combustion, Gas Flow Through Valves of, 278*
— — Combustion, Hydraulic Starting Motor for (Bryce Fuel Injector, Ltd.), 115*
— — Combustion, International Congress, Paris, 1951, Arrangements, 438
— — Combustion, Methods Used in Study, 40
— — Combustion, Productivity Team Visit to United States, Report on, 62
— — Combustion, Research Association, British, Formula for Stiffness of Crankshafts of Oil Engines, 204*. See *Errata*, 232
— — Combustion, Supercharging in, 411, 433*, 481*
— — Combustion. See also *Turbines, Gas*
— Locomotive. See *Locomotive*
— Motor Car. See *Engines, Petrol*
— Oil, Crankshafts, Formula for Stiffness of, 204*. See *Errata*, 232
— — Diesel, 176-b.h.p. Eight-Cylinder (J. and H. McLaren, Ltd.), 446*
— — Diesel, 80-b.h.p. Four-Cylinder (H. Meadows, Ltd.), 254*
— — Diesel, 130-b.h.p. Six-Cylinder Horizontal (H. Meadows, Ltd.), 344*
— — Diesel, 112-b.h.p. Six-Cylinder Horizontal (Norris, Henty and Gardners, Ltd.), 344*
— — Diesel, 827-h.p. Sixteen-Cylinder (Davey, Paxman and Co., Ltd.), 403*
— — Diesel, Supercharging in, 411, 433*, 481*
— — Diesel, 32-b.h.p. Three-Cylinder, for Ferguson Tractor (F. Perkins, Ltd.), 479*
— — Diesel, 20-b.h.p. Two-Cylinder (Armstrong Siddeley Motors, Ltd.), 479*
— — Diesel. See also *Motorships; Marine Propulsion; Diesel Engine Users' Association*
— — Four-Stroke, Trends in Design, 31
— — Hornsby-Akroyd, Use in Army, 415, 450
— — Marine, 1,125-b.h.p. Eight-Cylinder Clark-Sulzer, M.S. "Portsmouth," 32*
— — Marine, Investigations by British Shipbuilding Research Association, 55
— — Marine, Surface Finish of Parts of, 30, 55
— — Motor-Vehicle, Investigation of, 8*
— — See also *Tractors* and PARAGRAPH INDEX
— Petrol, Aeroplane. See *Aeronautics*
— — Motor-Car, Supercharging in, 411, 433*, 481*
— — Motor-Vehicle, Investigation on, 8*
— — See also *Aeronautics; Motor Cars*
— Steam, James Watt's "Lap," Model of, 199*
— — Marine, Surface Finish of Parts of, 30, 55
— — Marine. See also *Marine Propulsion; Turbines*
— Winding. See *Winding*
— See also PARAGRAPH INDEX
Engineers' Education. See *Education*
— Institutions. See *Institutions*
— Mechanical, Training of, 413
— Memorials to in Westminster Abbey, 382
— Production, Institution of. See *Production*
— and Shipbuilders in Scotland, Institution of, Presidential Address by Prof. G. Cook on Higher Technological Training, 419; Joint Meeting, Newcastle-upon-Tyne. See *Naval Architects, Institution of*
— Spelling of Word, 444
ENGINEERING, Disposal of Surplus Volumes, 63
— Apprentices. See *Education*
— Contracts. See *Contracts*
— Education. See *Education*
— Industry, Wage Structure in, 383, 411
— Laboratories. See *Laboratories; National Physical*
— Societies. See *Institutions*
— Standards. See *Standards Institution*
— and Utility Services for Buildings, Specification, 82
— Works. See *Works*
English Electric Co., Ltd., 32·5 MW Francis Turbines and Alternators for Loch Sloy Hydro-Electric Scheme, 2*, 97*; "Canberra" Mark 2 Bombing Aeroplane, 217*; 60-MW Hydrogen-Cooled Turbo-Generator, 287*
Errochty Switching Station, 523*
Essen, Dr. L., Redetermination of Velocity of Light, 442
Estimates, Select Committee on, Sixth Report, 159
Estoril Electric Railway, Portugal, 1,500-Volt Direct-Current Locomotive, 212*
Europe, Electricity Supply in, Problems of, 353
European Coal Industry, Position of, 410
— Economic Co-operation, Organisation for, Conference on Wind Power, 381
— Road Networks, Proposed, 434
Evans, E. L., on Deoxidation of Iron, 414
Evaporative Condenser. See *Condenser*
Excavator, ¾-cub. yd. Diesel-Driven, with Interchangeable Attachments (Blaw Knox, Ltd.), 369*
— Drag-Line, 100-ton Trailer for Transport of (R. A. Dyson and Co., Ltd.), 457*
— See also *Digger*
Exchangers, Heat, for Gas Turbines, 214*
Exhibition, Agricultural Machinery, and Smithfield Show, Earl's Court, 478*, 510*, 540*
— Aircraft, and Flying Display, Farnborough Aerodrome, 217*, 238*, 266*
— Centenary of Submarine Telegraphy, 201. See *Erratum*, 338
— and Conferences, Forthcoming, 91, 187, 271, 316, 415, 573
— and Conference, Vacuum Physics, 96
— and Congress, Public Works and Municipal Services. See *Public Works and Municipal Services Congress and Exhibition*
— Engineering, Institution of Civil Engineers, 5, 28
— Great, of 1851, Initiation of, 381

Exhibition, International Commercial Motor Transport, Earl's Court, 254*, 283*, 342*
— "Metals in Service of Mankind," Science Museum, 39
— Model Engineer, London, 135
— National Radio, Birmingham, 251
— Royal Agricultural Show, Oxford, 17*, 41*, 65*, 88*
— and Symposium, Electronics, Programme, 135
— See also PARAGRAPH INDEX
Experimental Tank. See *Tank*
"Explorer" Six-Wheel Drive Tractor, 284*
Explosions, Colliery. See *Accidents*
Exponential-Integral Functions, Generalised Tables of (Review), 430
Export Trade. See *Trade*; and *Industries* in PARAGRAPH INDEX
Exposition and Presentation of Technical Information, 228, 237
Express Motor and Body Works, Ltd., Semi-Trailer Coach for Passenger Transport, 162*
Extensometer, Roller-Mirror, Performance and Mounting of, 172*

F.

"F.8" Limousine-Type Fire Appliance, 343*
Faber, Dr. O., House of Commons Ventilation System, 165*; Engineering Features of House of Commons, 393*
Factor of Safety for Wire Ropes in Mines, 515
Factories, Efficient Utilisation of Electricity in, 552
— Effluents, Pollution of Rivers by, 506
— Management. See *Works Management*
— Silvertown, Venesta, Ltd., Model of, 28
Fagg, D. M., on Research for Galvanising Industry, 276
Fairbairn, W., Britannia and Conway Tubular Bridges, 205
Fairey Aviation Co., Ltd., "Fairey 17" Anti-Submarine Aircraft, 107, 269*; Aircraft Research and Development Equipment, 430*
Fairflight, Ltd., Accident to Tudor V Aircraft, 463
Fallacies, Popular (Review), 149. See *Erratum*, 391
Fallaci, Dr. B., on Effect of Cold Work on Steel, 463
Faraday House Old Students' Association, Annual Dinner, 397
Farm Mechanisation, Achievements in, 388*. See 356
— — and Agricultural Engineer, 262, 356
— — Problems in, 317, 356
Farmlug. See *Agricultural*; *Tractors*
Farnborough Aerodrome, Flying Display and Static Exhibition, 217*, 239*, 265*
— Royal Air Force Display, 39
Fats, Methods of Analysis of, Specification, 106
Fawley Oil Refinery, Building and Equipment of, 563*
Feed Pumps. See *Pumps*
— Water, Boiler, Oil Separator for (G. & J. Weir, Ltd.), 117*
— — Heater for Turbo-Generating Plant, 449
— — System, S.S. "Chusan," 527*
— — Temperatures for Turbo-Generating Plant, 449
— — See also *Water*
Fender, Gravity, Suspended, for Mena-al-Ahmadi Jetty, 5
Fenney, E., on Strength of "No-Fines" Concrete, 398*
Ferguson, H., Ltd., Post-Hole Digger, 42*; 13-Row Grain Drill, 42*
— Tractor, 32-b.h.p. Three-Cylinder Diesel Engine for (F. Perkins Ltd.) 479*
Ferguson, W., on Surface Finish of Marine-Engine Parts, 30
Fernandes, Prof. L., on Design of Gas Flashers, 477
Ferro-Concrete. See *Concrete*, *Reinforced*, and PARAGRAPH INDEX
Fielden (Electronics), Ltd., Electronic-Recording Manometer, 456*
Fielding & Platt, Ltd., Hydraulic Plant, Continuous Rolling Mill, Rogerstone, 338
Fighting Vehicles Design Establishment, British Light Car for Services, 104*
Filler Rod, Steel, for Gas Welding, Specification, 405
Filtration Plant, Mechanical, for Sewage, 506
Fin, Stabilising, S.S. "Chusan," 557*
Finland, Radio Beacons and Sound Signals to Aid Navigation, 570
Finniecome, J. R., on Torsional Stress in Helical Springs, 15*. See LETTERS, 40, 63, 135
Fire Appliance, 125-b.h.p. Diesel-Engined (Merryweather & Sons, Ltd.), 150*
— — "F.8," Limousine-Type (Dennis Brothers, Ltd.), 343*
— Damage to S.S. "Monarch of Bermuda," 152*
— in Domestic Buildings, Causes of, 289
— Research Board, Annual Report, 441
— — Organisation, Joint, Electrical-Analogue Apparatus, 5
— Resisting Structures, Electrical-Analogue Apparatus for, 5
— Service, National, Annual Report, 1947, 289
Firedamp Explosions. See *Accidents*
Fish Ladder, Tummel-Garry Hydro-Electric Scheme, 429*, 521*
Fisher, N. G., on Lectures in Electrical and Mechanical Engineering in Manchester, 354. See 216
Fisher, Lt. R. D., on Radio Telephone Calling Devices for Coast Guard, 570
Fishplates for Rail Joints, Improvements in, 572
Fitting of Shafts in Holes. See *Gauges*
Flashing Lighthouses, Gas, Design of, 477
Fleet. See *Warships*
Flexural Centre of Open Members, Apparatus for Study of, 321*
Flight Refuelling, Ltd., Refuelling in Flight Demonstration, 238
— See *Aeronautics*
Flint, Dr. A. R., on Stability and Strength of Slender Beams, 545*. See 333
Floor, Prestressed Concrete, Queen Mary College, 151*
Flow, Compressible Gas, Scale Analysis of, 113*
— of Gas, Experiments on, 277*, 333
— Line in Production Engineering, 309, 334, 351, 421, 561
Fodens, Ltd., Motor Omnibus Chassis with Rear Engine, 344*
Fog Signals and Coast Lights in Sweden, 477
— — in Lighthouses, Audibility of, 118*, 477
— — Synchronised at Sea, 570
Foil, Metal, Beta-Ray Thickness Gauge for (Baldwin Instrument Co.), 128
— Metallic, Thin, Production of, 296
Fontenay, France, High-Voltage Cable Tests at, 319*; High-Voltage Circuit Breaker Testing Station, 335*
Forage Harvester (Thwaites Agricultural Engineering Co., Ltd.), 67*
Ford Motor Co., Ltd., Fordson Root Harvester, 19*; Tractor-Mounted Deep-Digger Plough, 478*
Forest Fires, Investigations on, 442
— Products Research Board, Reports of (1939-1947), 110
Forrest, F., the Late, 444
Forrest, P. G., on Creep Due to Fluctuating Stresses at Elevated Temperatures, 189*
Foster Wheeler, Ltd., Boilers for S.S. "Chusan," 526*
Foundation Caissons for Swedish Lighthouses, 186, 518*
— Design and Soil Mechanics, 302, 419
— for Lighthouses in United States, 138
— Road, and Soil Mechanics, 345
Foundry, Steel, Post-War Problems, 507
— See also *Castings*
Fowler, J., & Co. (Leeds), Ltd. "Challenger Mark II" 80-b.h.p. Crawler Tractor, 17*; "Mark VF" Crawler Tractor with Bray Hydraulic Angledozer, 18*
Fracture, Brittle, in Ship Plates, 290*
Framework, Maxwell's Theory of Equilibrium and Stiffness of, 194*. See LETTER, 212
France, Berck Light Tower, Reconstruction in Prestressed Concrete, 186
— Chausey Island, Study of Wave Motion at, 160
— Electric Power Supply in, 529
— Extra High-Voltage Cable Development, 319*
— Testing of High-Voltage Circuit Breakers, 335*
Francis Turbines. See *Turbines, Hydraulic*
Fransson, F., on Sound Measurements at Lister Beacon, Norway, 570
Fraser & Chalmers Engineering Works, 72-in. Blake Jaw Crusher, 73*
Fraser Tractors, Ltd., Track-Laying Agricultural Tractor, 67*
Freight Transport by Road, Rail and Inland Waterway, Integration of, 133, 424. See LETTER, 183
Freon Refrigerators, at House of Commons, 395*
Fresnel Lens of Dioptric Section, Efficiency of, 477
Friction of Road Surfaces, Investigations, 345
Frigidaire, Ltd., 275-kW Continuous Furnace for Copper-Brazing, 551*
Frost, R., the Late, 355
Frost, R. V., on Swedish Lighthouses on Submarine Sites, 513*. See 186
Fuel, Colloidal. See *Colloidal Fuel*
— Consumption in Heavy-Duty Oil Engines, 31
— for Gas Turbines, 215
— Ignition in Aero Gas Turbines, 230*
— Industries, German, During 1939-45, 182
— Liquid. See also *Oil Fuel*
— Motor. See also *Gas*; *Motor*; *Paraffin*; *Petrol*; *Producer*
— Oil. See *Oil Fuel*
— and Power, Ministry of, Annual Report on Safety in Mines Research, 1948, 14; Statistical Digest, 1948 and 1949, 379; Statement on Coal Situation, 410. See 381; British Electricity Authority, Annual Report, 473
— Research Board, Report on Work in 1939-46, 505
— Tank, Hydrogen-Peroxide, for Aircraft Starting Motors (Avro (Canada), Ltd.), 72
— See also *Coal*; *Oil*; *Gas*
Fulbright Travel Grants for Study and Research, 443
Fume Emission from Works, Prevention of, 158
Functions, Normal Elliptic (Review), 168. See LETTER, 412
— $\sin \phi/\phi$, Tables of (Review), 349
Furnace, Blast, Reduction of Lump Iron Ores in, 253
— 275-kW Continuous, for Copper-Brazing (Birlec, Ltd.), 551*
— Gas-Fired, Vertical-Slot Automatic (Incandescent Heat Co., Ltd.), 198*
— 1,000-kW Induction, for Continuous Brass Rolling Mill, 398
— Open-Hearth, Basic, Movement of Sulphur Between Gas and Slag in, 447
— — Hearth, Pressure Meter for (Tinsley Industrial Instruments), Ltd.), 374
— — Hearth, Venturi Type, Model of, 374*
— See also *Coke Ovens*

G.

"GAL 60" Freight-Transport Military Aircraft, 217*
Galvanising, Hot-Dip, International Conference, Copenhagen:
Outlook for General Galvanising, by R. L. Stubbs, 276
Wet Galvanising versus Dry Galvanising, by Dr. H. Bablik, 276
Some Thermal Considerations in Heating of Galvanising Baths, by R. W. Bailey, 276
Survey of Formation of Zinc Ash, Dross and Flux Skimmings from Galvanising Baths During 1949, by R. W. Bailey, 276
Galvanising, Hot-Dip, International Conference, Copenhagen—*continued.*
Can Dross be Eliminated from Hot-Dip Galvanising? by W. G. Imhoff, 276
Influence of Aluminium on Alloying Action in Hot-Dip Galvanising, by M. L. Hughes, 276
Twenty Years of Research for Galvanising Industry, by W. L. Hall and D. M. Fagg, 276
Corrosion Resistance of Galvanised Coatings, with Special Reference to Galvanised Window Frames, by E. F. Pellowe, 276
Galvanising Industry, Wet and Dry Problems and Research in, 276
Gangways, Telescopic, for Southampton Docks (Structural and Mechanical Development Engineers, Ltd.), 6*, 130
Gardner, G. T., Continuous Rolling Mill, Rogerstone, 265*, 281*, 337*
Garrard, C. J. O., on Present-Day Practice in Electrical Switchgear, 226
Garratt, G. R. M., on Centenary of Submarine Telegraphy, 201. See *Erratum*, 333
Gas Board, North Thames, 1,390-kW Pass-Out Steam Turbine, 346*
— — South Eastern, M.S. "Wandsworth," 303*; Coke-Oven Plant, Greenwich Gasworks, 475, 499*
— — West Midlands, Gas Turbine for Waste-Heat Recovery, 243
— Coke-Oven. See *Coke Oven*
— Dynamics, Developments in, 177*, 333
— Exhaust, from Mining Diesel Locomotives, Noxious Proportions, 14
— Fired Furnaces. See *Furnaces*
— Flashing Lighthouses, Design of, 477
— Flow, Compressible, Scale Analysis of, 113*
— and Gasworks. See also PARAGRAPH INDEX
— Used as Illuminants in Navigation Buoys, 274
— Industry, Statistics for 1948 and 1949, 379
— Producer. See *Producer*
— Technology, Institute of, Chicago, Experiments with Hartmann Acoustic Generator, 99*, 136*
— Turbine. See *Turbine*
— Welding. See *Welding*
— See also *Hydrogen*, etc.
Gaseous Diffusion Process, Engineering Developments in (Review), 397
— Discharges from Industrial Processes, Prevention of, 158
Gasoline. See *Engine, Petrol*; *Aeronautics*
Gasworks, Beckton, 1,390-kW Pass-Out Steam Turbine, 346*
— East Greenwich, Coke-Oven Plant at, 475, 499*
Gates, Control, Wassen Hydro-Electric Scheme, 305*
— Drum, Clunie Dam, 427*
— House, Loch Sloy Hydro-Electric Scheme, 25*
— and Valves, Tummel-Garry Hydro-Electric Scheme, 426*, 493*, 521*
Gauges, Angle, Combination, Production of, 417*
— Height, Vernier, Specification, 82
— for Land-Boiler Installations, Specification, 106
— Measuring, Interferometer for Testing (Coventry Gauge and Tool Co., Ltd.), 243*. See LETTER, 412*
— Thickness, Beta-Ray, for Metal Foil (Baldwin Instrument Co.), 128
— and Tool Makers' Association, Annual Report of, 159
— Vacuum, Types of, 96
Gear-Cutting Machines. See *Machine Tools*
— Infinitely-Variable, Gerritsen (Tiltman Langley Laboratories, Ltd.), 530*
— Manufacturers, Machine Tools for, 145*, 169*. See LETTERS, 252, 291, 331, 354, 382
— Steering. See *Steering*
Geared Turbines, Marine. See *Marine Propulsion*
Gearing, Naval Experiences with, 539
— Reduction, S.S. "Chusan," 526*
— Transmission, Motor Vehicle, Investigation on, 9*
General Electric Co., Ltd., Liquid Controller for Slip-Ring Induction Motors, 21*; Overhaul of Machinery of S.S. "New Australia," 153; 1,500 Volt Direct-Current Locomotive for Portugal, 212*; 1,250 kW Mixed-Pressure Turbo Generators, 243*; 200 kV Schering Bridge for High Voltage Laboratory, 208*. See *Erratum*, 263; 900 b.h.p. Diesel Electric Plant for Pilot Vessel "Sir Thomas Brocklebank," 324; Multi-Lingual Announcing Equipment, 392*
Generating Machine, Gear. See *Gear* under *Machine Tools*
— Plant, Graphical Symbols for, Specification, 470
— Station. See *Power Station*
Generator, Acoustic, Hartmann, Experiments with, 99*, 136*
— Electric, 850-kW, S.S. "Chusan," 527*
— — 22,667-kVA, Clunie Power Plant, 493*
— — for Continuous Rolling Mill at Rogerstone, 265*, 281*, 337*
— — 800-kW, for Diesel-Electric Locomotives (British Thomson-Houston Co., Ltd.), 404*
— — Emergency, 100-kW, S.S. "Chusan," 527*
— — 60-MW Hydrogen-Cooled, Stourport "B" Power
— — 1,390-kW (Lancashire Dynamo and Crypto, Ltd.), 346*
— — 32·5-MW, Loch Sloy Hydro-Electric Scheme, 2, 97*
— — 3,750-kVA, for Paper Mill, 209*
— — 7·5-MW, Pitlochry Power Plant, 521*
— — for Power Stations, 79
— — Turbine-Driven, Standardisation of, 449*
— — 30,000-kVA, Wassen Hydro-Electric Scheme, 313*
— — See also *Turbo-Generators*
Geophysical Surveying (Review), 556
George, Sir E. J., the Late, 385
German Coal-Tar and Benzole Industries, Report, 1939-45, 182
Gerritsen, J. J., Infinitely-Variable Gear, 530*
"Ghost-Lancastrian" Aircraft with Walter Assisted Take-Off Units, 575*
Gibb, Sir A., and Partners, Model of Owen Falls Hydro-Electric Scheme, 28; Loch Fannich Tunnel, 242*; Tummel-Garry Hydro-Electric Scheme, 425*, 460*, 493*, 521*
Giddings, H., on Aircraft Riveting, 467
Gignet, R., on Electric Power Supply in France, 529
Gilbert, Dr. P. T., on Stress-Corrosion of Aluminium-Magnesium Alloy, 341
Gilkes, G., & Gordon, Ltd., 225-h.p. Hydraulic Turbine, 429*
Gill, Sir A. J., on Recent Developments in Telecommunications, 331, 352
Gill, Sir F., the Late, 332*
Gilliam, C., on Aerial Systems for Radio Beacons, 571
Gille, P., on Filling Buoys with Propane, 274
Girder, Box, Ship's Hull, Testing of, 54
— Plate, for Railway Bridges, 485
— Steel, Application of Prestressing to, 385
— See also *Beams*: *Bridges*
Glanville, Dr. W. H., on Roads of Great Britain, 345*, 387*
Glasgow and South Western Railway, Centenary of, 418
"Gleep" at Harwell Atomic Energy Establishment, 497*
Glenfield & Kennedy, Ltd., Valves and Gates for Loch Sloy Hydro-Electric Scheme, 3*, 26*, 49*; Gates and Valves, Tummel-Garry Hydro-Electric Scheme, 426*, 521*; 10,900-h.p. Kaplan Hydraulic Turbine, 521*; Sewage Filtration Plant, 506
Gloster Aircraft Co., Ltd., "Meteor" Ground-Attack Aircraft, 238*
Gloves, Safety, Industrial, Specification, 216
Goddard, D. R., on Modern Vacuum Pumps, 95
Golder, Dr. H. Q., on Influence of Soil Mechanics on Civil Engineering, 419. See 302
Good, P., the Late, 476, 499
Goodale, E. W., on Great Exhibition, 1851, 381
Goodall, S. E., on Research in Manufacture of Electrical Equipment, 543
Göschenenreuss Dam, Wassen Hydro-Electric Scheme, 305*
Gotland Island to Sweden Transmission Line, 62
Gotthardreuss Weir, Wassen Hydro-Electric Scheme, 305*
Gough, H., on Visibility and Luminous Range in Lighthouses, 570
Goulburn River Dam, Victoria, Australia, 382
Governing Gear, Hydraulic-Turbine, Clunie Power Plant, 493*
— System for 1,390-kW Pass-Out Steam Turbine for Beckton Gas Works, 346*
Government Aid in Forming National Science Centre, 475
— Proposals for National Science Centre, 411
— Railways. See *Railways*
— Scientific Policy, Review of, for 1949-50, 109
Governor Gear for 4,000-kW Pass-Out Steam Turbine, 209
Gracie, J. J., Management Approach to Productivity, 561. See 309, 351
"Gradall" Mechanical Hoe for Transmission Line Construction, 261*
Graham and Woolnough, Motor Pilot Vessel "Sir Thomas Brocklebank," 324*
Grain Drill, 13-Row (H. Ferguson, Ltd.), 42*
— in Sacks, Drying Plant for, 391*
Grand Surrey Canal, Replacement of Railway Bridge Over, 487*
Granqvist, C. E., on Radio Beacons for Distance and Direction, 570
Graphical Symbols for Generating Plant and Compressing Plant, Specification, 470
Grass Drier (Heenan & Froude, Ltd.), 90*
— — Mark I (Templewood Engineering Co., Ltd.), 89*
— — Portable (Tiltman Langley Laboratories, Ltd.), 72
Grease Lubricator, Mechanical (C. C. Wakefield & Co., Ltd.), 316*
Great Britain, Road Problems of, 345*, 387*
— Exhibition of 1851, Initiation of, 381
Greco, Prof. L., on Construction of Lighthouses of Prefabricated Elements, 186; Use of Reinforced Concrete in Construction of Lighthouses, 186
Greenough, Dr. G. B., on Mechanism of Creep as Revealed by X-Ray Methods, 372
Greenwich Gasworks, Coke-Oven Plant, 475, 499
Greenwood, E. D., on Pure Bending of Rectangular Plates, 51*, 76*
Gregory, R. W., on Euler Buckling Load of Struts with Crossed Pins, 112. See LETTERS, 160*, 252, 354
Grudie Bridge, Hydro-Electric Power Station, Loch Fannich Tunnel, 242*
Guenot, Dr. R., on Effect of Cold Work on Steel, 463
Guest, J. J., on Stresses in Tubes Due to Internal Pressure, 412. See 218*. See LETTERS, 383, 476, 508
Gun Laying, Automatic Control Systems for, 237, 360*
Gunner, A. M., on Machine Tools for Small and Medium Gears, 145*, 169*. See LETTERS, 252, 291, 331, 354, 382
Gyroscope, Velocity, S.S. "Chusan," 560*

H.

HAAS, A. L., the Late, 252
Hackbridge and Hewittic Electric Co., Ltd., Direct-Current Welder with Rectifier Control, 205*; 20-MVA Transformers, 279*
Hadden, S. E., on Stress-Corrosion of Aluminium-Magnesium Alloy, 341
Hall, J. & E., Ltd, Altitude Test Chamber for Aircraft, 432*; Refrigerating Plant, S.S. "Chusan," 528*
Hall, W. L., on Research for Galvanising Industry, 276
Hallsberg to Harspranget Transmission Line, 61
Hammersmith Hospital, 10-Million Electron-Volt Linear Accelerator, 333

Hampton, Dr. W. M., on Transmission of Sound and Light in Atmosphere, 118*, 477; on Visibility and Luminous Range in Lighthouses, 570
Handbook, Hydro-Electric (Review), 315
Handley Page (Reading), Ltd., "HPR 2" Training Aeroplane, 270*
Handling Plant, Aggregate, Loch Sloy Hydro-Electric Scheme, 3*
— — Ash, Stourport "B" Power Station (Babcock & Wilcox, Ltd.), 287
— — Coal and Coke, East Greenwich Gasworks, 499*
— — Coal, Stourport "B" Power Station, 286
Hankins, Dr. G. A., the Late, 355
Hanover Colliery, Koepe Winding System, 516
Hardening of Metals. See *Heat Treatment* under *Metallurgy*
Harding, H. J. B., on Influence of Soil Mechanics on Civil Engineering, 419. See 302
Hardness Tests. See *Tests* (*Materials*)
Harmonic Analyser and Its Application, 333
Harrison, D., on Dynamic Braking of Alternating-Current Motors, 528*
Harrogate, British Electrical Power Convention. See *British Electrical Power Convention*
Harry Furlong Beacon, Construction of, 160
Harspranget to Hallsberg Transmission Line, 61
Hartley, Sir H., on Man's Use of Energy, 202, 236, 250
Hartmann Acoustic Generator, Experiments with, 99*, 136*
Harvester, Beet (Johnson's (Engineering), Ltd.), 19*
— — "Peter Standen" (F. A. Standen & Sons (Engineering), Ltd.), 65*
— — with Top Saver (Catchpole Engineering Co., Ltd.), 66*
— Forage (Thwaites Agricultural Engineering Co., Ltd.), 67*
— Root, Fordson (Ford Motor Co., Ltd.), 19*
Harvesting Machines, Developments in, 318, 390*
Harwell Atomic Energy Establishment, Graphite Low-Energy Experimental Pile, 497*
Harwich, Parkeston Quay Station, Multi-Lingual Announcing Equipment, 392*
Hawker Aircraft, Ltd., "P 1081" Fighting Aeroplane, 217*, 238
Hawksley Lecture on Supercharging in Internal-Combustion Engines, 411, 433*, 481*
Haymaking, Experiments on Mechanisation, 317
Head Wrightson Machine Co., Ltd., Plant for Continuous Rolling Mill, Rogerstone, 281*, 338
Health, Ministry of, Rivers (Prevention of Pollution) Bill, 411
Heat Engines. See *Engines*; *Turbines*; *Aeronautics*
— Exchangers for Gas Turbines, 214*
— Insulating Materials, Specification, 376
— Pump, Stourport "B" Power Station, 287. See LETTERS, 383, 508
— Resisting Materials at Elevated Temperatures, Creep Due to Fluctuating Stresses in, 189*
— Transfer, Vol. I (Review), 172
— — International Conference on, 1951, Arrangements, 226
— Treatment of Metals. See *Metallurgy*
— Waste. See *Waste Heat*
Heater, Feed-Water. See *Feed-Water Heater*
Heating Equipment, Continuous Rolling Mill, Rogerstone, 340
— and Planing Machine, "Elstree" for Roads, 44-b.h.p. Diesel-Engined (J. Olding & Co., Ltd.), 571*
— System for House of Commons, 393*
— — Luton Factory of Vauxhall Motors, Ltd., 518
Hedge-Cutting Machine (A. B. Blanch & Co., Ltd.), 511*
Heenan & Froude, Ltd., Grass Drier, 90*
Height Gauges, Vernier, Specification, 82
Henderson, J. G., on New Harmonic Analyser, 333
Henley's, W. T., Telegraph Works Co., Ltd., Birtley Factory, 375*
Herbert, A., Ltd., 8in Lathe for Large-Diameter Work, 532*
Hermansson, H., on Sound Measurements at Lister Beacon, Norway, 570
"Heron" Air Liner, 239*
Hick, Hargreaves & Co., Ltd., 4,000-kW Pass-Out Steam Turbine, 209*
Hickling, G. H., on Vibration of Gas-Turbine Blades, 444. See 323*. See LETTER, 476, 539
High-Temperature Tests. See *Tests* (*Materials*)
High-Tension Networks, International Conference, Paris:
Report of Proceedings, 15, 61
Alternating Current Transmission, by P. Sporn, 61
Telephonic and Radio Interference from High-Voltage Systems, by C. W. Marshall, 103
Mechanisation of Transmission-Line Construction, by A. E. Davison, 261*
Extra-High Voltage Cable Developments in France, by M. Laborde and R. Tellier, 319*
High-Voltage Circuit-Breaker Testing in France, by M. Laborde and Y. Baron, 335*
High Wycombe, Autumn Meeting of Newcomen Society at, 331
Highways. See *Roads*
Hilger & Watts, Ltd., Optical Fittings for Interferometer, 243*. See LETTER, 412*; Optical Measuring System for Boring Machine, 312*
Hills, R., on Use of Wind-Tunnel Data in Aerodynamic Design, 356
Hilsch Tube for Gas-Flow Experiments, 277*, 333
Hinderwell, F. B., on Self-Balancing Instruments for Process Industries, 297*
Hinkins & Frewen, Ltd., Continuous Rolling Mill, Rogerstone, 265*, 281*, 337*
History of Mechanics (Review), 267
History of Sugar, Vol. II (Review), 4
H.M.SS. See under *Warships*
Hobbing Machines, Gear. See *Gear* under *Machine Tools*
Hoben, J. J., on Brass Rolling Mill at Waterbury, Connecticut, U.S.A., 398
Hodgkinson, E., Britannia and Conway Tubular Bridges, 205
Hoe, Detachable, for Agricultural Tractor, 389*
— Mechanical, "Gradall," for Transmission-Line Construction, 261*
Hogg, D. B., on Electrical Installations in Large Chemical Factories, 573
Hoist, Hydraulic, for Tractor (Stanhay (Ashford), Ltd.), 66*
— Power-Driven, Portable (Tasker's of Andover (1932), Ltd.), 42*
— See also *Transporters*
Holder, D. W., on Aerodynamic Research at National Physical Laboratory, 21*, 45*
Holes, Fitting of Shafts in. See *Gauges*
Holland and Hannen & Cubitts, Ltd., Prestressed-Concrete Beams for Queen Mary College, 151*
Holland, L., on Vacuum Coating Plant, 96
Holliday, Hall & Stinson, Ltd., Electrical Equipment for Telescopic Gangways, 6*
Holmes, K., on Pressure Welding of Copper-Base Alloys, 399
Holoplast, Ltd., Production of Plastic Panels, 176*
Holtzberg, A., on Radio Control at Utgrunden Lighthouse, 571
Hooks, Wrought-Iron and Mild-steel, Specification, 130
Hoover, Ltd., Commutator-Turning Machine, 466*
"Horn-draulic" Loader for "Cropmaster" Agricultural Tractor, 43*
Hornsby-Akroyd Oil Engines, History of, 415, 450
House Building, Output Problems in, 380
— of Commons Debating Chamber, Model Investigation of Ventilating System for, 165*; Engineering Features of, 393*
"HPR 2" Training Aeroplane, 270*
Hughes, M. L., on Influence of Aluminium in Hot-Dip Galvanising, 276
Hump, Classification, St. Luc Marshalling Yard, 553*
Humphreys & Glasgow, Ltd., 1,390-kW Pass-Out Steam Turbine, 346*; Gas Producers at East Greenwich Gasworks, 499
Hunslet Engine Co., Ltd., 300-b.h.p. Diesel-Engined Locomotive for Steelworks, 467*
Hydraulic Power Plant. See *Power Plant*
— Press. See *Press* under *Machine Tools*
— Research, International Association for, Bombay Meeting, 135
— Turbines. See *Turbines*; *Power Plant*
Hydraulics. See *Water*
Hydro-Electric Handbook (Review), 315
— — Power Plant. See *Power Plant*
Hydrogen Cooling of Alternators, 449
— — Oil-Seal Treating Unit for, Stourport "B" Power Station, 287*
— Peroxide Fuel Tank for Aircraft Starting Motors (Avro (Canada), Ltd.), 72
— in Steel, Effect of Cold Work on, 463
Hydrology (Review), 172

I.

ICE Formation on Aircraft, Electro-Thermal Equipment for Removal, 178
— See also *Refrigeration*
Ignition, Fuel, in Aero Gas Turbines, 230*
Illuminants in Navigation Buoys, Gases Used as, 274
Illumination. See also *Light*; *Lighting*; and *Lamps* under *Electric*
Illustration and Presentation of Technical Information, 228, 237
Imhoff, W. G., on Dross Elimination in Hot-Dip Galvanising, 276
Impact Tests. See *Tests* (*Materials*)
Imperial Chemical Industries, Ltd., Completion of Loch Fannich Tunnel, 242*
— College of Science and Technology, Instruction in Applied Optics, 82
Import Trade. See *Trade*
Impulse Turbines. See *Turbines*
Incandescent Heat Co., Ltd., Automatic Vertical-Slot Furnace, 198*
— Lamps. See *Lamps* under *Electric*
India Rubber. See *Rubber*
— 20-MVA Transformers for (Hackbridge & Hewittic Electric Co., Ltd.), 279
Indian Government Railways, 2-8-2 Class-WG Locomotives, 193*
Indicating Instruments, Electric, Self-Balancing, 297*
Induction Furnaces. See *Furnace, Electric*
— Motor. See *Motor, Electric*
Industrial Accidents. See *Accidents*
— Agreements and Disputes. See *Labour* and *Trade Societies* in PARAGRAPH INDEX
— Chemistry. See *Chemistry*
— Economics. See *Labour*
— Furnaces. See *Furnaces*
— Management. See *Works Management*
— Research: See *Research*
Industry. See *Trade* and PARAGRAPH INDEX
Ingot, Heat Conservation, Time Studies on, 275
— Moulds, Distribution of Temperature in, 275
Inland Navigation. See *Canals: Rivers, etc.*
— Waterways, Road, and Railways, Integration of Freight Services by, 424
Institutes. See *Institutions*
Institution, British Standards. See *Standards*
— of Production Engineers. See *Production*
— Royal. See *Royal Institution*
— Technical and Scientific. See *Aeronautical Society, Royal*; *Agricultural Society, Royal*; *Arts, Royal Society of*; *Aslib*; *British Association*; *Canada, Engineering Institute of*; *Civil Engineers, Institution of*; *Consulting Engineers, Association of*; *Costs and Works Accountants, Institute of*; *Electrical Engineers, Institution of*; *Engineers and Shipbuilders in Scotland, Institution of*; *Iron and Steel Institute*; *Iron and Steel Institute, West of Scotland*; *Junior Institution of Engineers*; *Locomotive Engineers, Institution of*; *Marine Engineers, Institute of*; *Mechanical Engineers, Institution of*; *Metals, Institute of*; *Metallurgists, Institution of*; *Mining and Metallurgy, Institution of*; *Model and Experimental Engineers, Society of*; *Motor Manufacturers and Traders, Society of*; *Naval Architects, Institution of*; *Newcomen Society*; *North-East Coast Institution of Engineers and Shipbuilders*; *Physics, Institute of*; *Production Engineers, Institution of*; *Railroads, American, Association of*; *Royal Institution*; *Royal Society*; *Royal United Service Institution*; *Scientific Instrument Manufacturers Association of Great Britain*; and *Structural Engineers, Institution of*
Instruments, Scientific, Testing by National Bureau of Standards, 102
— Self-Balancing, for Process Industries, 297*
— Transformers, Defects of, Effect of Core Properties on, 184*
— See also *Aeronautics*; *Electric*
Insulation. See *Heat*; *Electric*
Interferometer for Testing Measuring Gauges (Coventry Gauge & Tool Co., Ltd.), 243*. See LETTER, 412*
Internal-Combustion Engines. See *Aeronautics*; *Engines*; *Motor Cars*; *Motor Boats*; *Tractors*; *Turbine Gas*,
International Association for Bridge and Structural Engineering, Papers of (Review), 459
— — for Exchange of Technical Students, Annual Report, 382
— — for Hydraulic Research, Bombay Meeting, 135
— Commercial Motor Transport Exhibition, Earl's Court, 254*, 283*, 342*
— Conference on Calculating Machines, Paris, 151
— — on Heat Transfer, 1951, Arrangements, 226
— — on High-Tension Networks. See *High-Tension Networks, International Conference, Paris*
— — on Hot-Dip Galvanising, Copenhagen. See *Galvanising, Hot-Dip, International Conference, Copenhagen*
— — on Safety of Life at Sea, 551, 578
— Congress of Radiology, London, 87
— Declassification Conference on Atomic Energy, 443
— Internal-Combustion Engine Congress, Paris, 1951, Arrangements, 438
— Lighthouse Conference, Paris. See *Lighthouse Conference, International, Paris*
— Mechanical Engineering Congress, Brussels, Programme, 135
— Railway Congress, Rome. See *Railway Congress, International, Rome*
— Trade. See *Trade*
— Union of Electricity Producers and Distributors, Report of Congress, 1949, 87
Inveruglas Switching Station, Loch Sloy Hydro-Electric Scheme, 98*
"Invicta" Self-Propelled Agricultural Baler, 88*
Ireland, Armagh Planetarium, 63
Irens, A. N., on Efficiency of Electrical Power Utilisation, 552
Iron Alloys. See *Metallurgy* and *Steel*
— Corrosion. See *Corrosion*
— Furnaces. See *Furnaces*
— Heat Treatment. See *Metallurgy*
— Manufacture. See *Furnaces, Blast*
— Ore. See *Ore*
— Rolling Mills. See *Rolling Mills*
— containing Silicon, for Cores of Instrument Transformers, Properties of, 184*
— and Steel Act, Debate on, 240
— — Deoxidation of, 414
Iron and Steel Institute:
Symposium on High-Temperature Steels and Alloys for Gas Turbines, Programme, 221; Postponement of Meeting, 242
Special Autumn Meeting, Glasgow:
Programme, 163
Inaugural Proceedings, 253
Visits and Excursions, 275
Joint Session with West of Scotland Iron and Steel Institute:
Reports of Discussions, 253, 275
Reduction of Lump Ores, by Drs. R. Wild and H. L. Saunders, 253
Distribution of Temperature in Ingot Moulds and Its Relation to Ingot Structure, by I. M. Mackenzie and A. Donald, 275
Ingot Heat Conservation: Time Studies from Casting to Rolling, by Dr. A. V. Brancker, J. Stringer and L. H. W. Savage, 275
Ingot Heat Conservation: Mould and Ingot Surface Temperature Measurement, by Dr. A. V. Brancker, 275
Annual Autumn Meeting, London:
Programme, 325
Inaugural Proceedings, 414
Election of Officers and Council, 414
Reports of Discussions, 414, 447, 463, 491
Thermodynamic Background of Iron and Steel Making Processes. II. Deoxidation, by Dr. F. D. Richardson, 414
Studies in Deoxidation of Iron; Deoxidation by Aluminium, by H. A. Stoman and E. L. Evans, 414
Thermodynamic Aspects of Movement of Sulphur Between Gas and Slag in Basic Open-Hearth Process, by Dr. F. D. Richardson and G. Withers, 447
Effect of Cold Work on Steel (in seven sections), by Prof. J. H. Andrew, Drs. H. Lee, P. L. Chang, B. Fang, R. Guenot, and Others:
I. Effect of Carbon on Work Hardening Properties of Steel, 463
II. Effect of Cold Work upon Electrical Resistivity of Steel, 463
III. X-Ray Investigation of Internal Strains in Cold-Drawn Steels, 463
Iron and Steel Institute—*continued*
Annual Autumn Meeting, London—contd.
IV. Effect of High-Speed Deformation on Steel, 463
V. X-Ray Investigation of Structural Changes in Steel Due to Cold Working, 463
VI. Effect of Cold Work on Hydrogen in Steel, 463
VII. General Discussion and Correlation of Results, 463
Atlas of Isothermal Transformation Diagrams of British Standard En Steels, by Dr. L. B. Pfeil, 491
Transformations $\alpha \rightarrow \gamma$ and $\gamma \rightarrow \alpha$ in Iron-Rich Binary Iron-Nickel Alloys, by Dr. N. P. Allen and C. C. Earley, 492
Acceleration of Isothermal Transformation of Austenite, by Dr. M. D. Jepson and Prof. F. C. Thompson, 492
Breakdown of Austenite Below the Ms Temperature by Prof. F. C. Thompson and Dr. M. D. Jepson, 492
Iron and Steel Institute, West of Scotland Presidential Address, by W. Barr, on Metallurgical Trends in Production of Steel Plates, 453; Autumn Meeting. See *Iron and Steel Institute*
— — Research Association, British, Physics Laboratory, 347*
— — Works. See *Works*
— — See also PARAGRAPH INDEX
— Tests. See *Tests* (*Materials*)
— Welding. See *Welding*
— Wrought Tubular Bridges, Construction of, 205
— See also *Cast Iron*; *Steel*; *Metallurgy*
Ironwork, Structural. See *Bridges*; *Roofs*; *Structures*
Isothermal Transformation of Austenite, 492
— — Diagrams of En Steels, Atlas of, 491
Italian Lighthouses, Methods of Construction of, 186
Ivatt, H. G., 827-h.p. Diesel-Electric Locomotive, 403*

J.

JACKSON, S. B., on Heat Pumps at Stourport "B" Power Station, 508. See 287. See LETTER, 383
"Jagd" German Military Tank, Development of, 474, 569
Jeep Service Motor Car, British Version, 104*
Jenolite, Ltd., Rust-Removing Process, 532
Jepson, Dr. M. D., on Isothermal Transformation of Austenite, 492
Jet-Impingement Apparatus for Study of Corrosion by Sea Water, 291
Jetty, Mena-al-Ahmadi, Suspended Gravity Fenders for, 5
"John Deere" MC Track-laying Tractor, 43*
— — Sugar-Beet Harvester, 391*
Johnson, E., on Experiments on Tapping, 507
Johnson, J. H., the Late, 508
"Johnson" Potato Harvester, 391*
Johnson's (Engineering), Ltd., Beet Harvester, 19*
Joints, Rail, Improvements in, 572
— Welded, Stress-Relieving and Pre-Heating of (Quasi-Arc Co., Ltd.), 392
Jones Brothers, "Invicta" Self-Propelled Agricultural Baler, 88*; "Panther" Self-Tying Agricultural Baler, 89*
Joughin, Comdr. (E) J. H., on Naval Gearing, 539
Journals. See *Bearings*
Jubilee of Central London Railway, 91*
— of City and South London Railway, 556
— Paris Underground Railway, 15
Junior Institution of Engineers, Awards and Prizes, 279

K.

KALMAR Strait, Sweden, Lighthouses in, 186, 513
"Kamewa-Stone," Reversible-Pitch Propeller, 303*
Kapp, Prof. R. O., on Presentation of Technical Information, 228. See 237
Karrier Motors, Ltd., "Bantam" 2-ton Motor Chassis, 258*
Kearns, H. W., & Co., Ltd., Tool-Room Boring Machine with Optical Measuring System, 312*
Keir & Cawder, Ltd., Aggregate Plant, Loch Sloy Hydro-Electric Scheme, 3*
Kelvin Gold Medal, Award to Dr. T. von Karman, 381
Kennedy & Donkin, Loch Sloy Hydro-Electric Scheme, 1*, 25*, 49*, 97*, 330; Model of Owen Falls Hydro-Electric Scheme, 28
Kent, J. L., on Design of Seakindly Ships, 69*, 93*. See 65, 74
Kenworthy, L., on Corrosion in Sea-Water Systems in H.M. Ships, 291
Kerbs, Channels and Edgings, Pre-Cast Concrete, Specification, 479
Kingcome, Engr. Vice-Admi. Sir J., the Late, 64
Kingsbury Colliery, 2,500-kW Mixed-Pressure Turbine Plant, 243*
Kitchen & Wade, Ltd., Drilling Machines for Boiler Work, 191*; Drilling and Reaming Machine for King-Pin Holes, 285*
Knoyle, C. H., on Production of Combination Angle Gauges, 417*
Koepe Winding System for Mines, 516
Kuwait Oil Co., Ltd., Semi-Trailer Coach for Passenger Transport, 162*

L.

LABORATORIES of British Cast Iron Research Association, Extensions, 34
— Cambridge University Engineering, Exhibits at Institution of Civil Engineers Conversazione, 28
— Chemical Research, Teddington, Work of, 7*

Laboratory, High-Voltage, 200-kV Schering Bridge for, 208*. See *Erratum*, 263
— Mechanical Engineering, Manchester College of Technology, Opening of, 475
— Motor Industries Research Association, Work of, 8*
— Physics, British Iron and Steel Research Association, 374*
— Research, Leatherhead, British Electricity Authority, 80*
— — Road, Earth-Pressure Recorders, 5; Work of, 345*, 387*; Experiments on Adhesion of Chippings and Tar on Roads, 421
— Technicians, Courses at City and Guilds of London Institute, 139
— Testing and Instrument, College of Aeronautics, Cranfield, 126*
— See also *National Physical*
Laborde, M., on High-Voltage Cable Developments in France, 319*; on High-Voltage Circuit-Breaker Testing in France, 335*

Labour :

Apprenticeship in British Railways, 485
— in Building Industry, 181
— Scheme of T. H. & J. Daniels, Ltd., 418
British Transport Commission's Report, 273
Electrical Technicians, Report on Educational Training Schemes for, 443
Industrial Accidents. See *Accidents*
Labour in American Pressed-Metal Industry, 86. See LETTER, 112
— in Coal Industry, National Coal Board's Report for 1949, 13
— in Coal Mines, 381, 410
— in House-Building Industry, 380
— Ministry of, Inquiry into Scientific Man-Power, 109
— Notes, 20, 44, 68, 92, 116, 140, 164, 188, 223, 286, 358, 386, 416, 448, 480, 512, 544, 574. See PARAGRAPH INDEX
— in United States Internal-Combustion Engine Industry, 62
Man-Power, Scientific, Inquiry into, 109
Printing Trade, Dispute in, 202, 213, 225, 289, 301, 309, 317, 329
Production Engineering Research Association Courses for Foremen, 357
Time Studies in Engineering Production, 309, 310*, 351, 561
Wages in Engineering Industry, 411. See LETTER, 383
— Structure in Engineering Industry, 383, 411
Ladder, Mobile Extending (Merryweather and Sons, Ltd.), 280*
Lagging Materials. See *Heat Insulation*
Lake St. Clair Light Station, 138
Laminar Flow, Hull Design for, 75
Lamps, Electric. See *Electric*
Lancashire Dynamo and Crypto, Ltd., 1,390-kW Electric Generator, 346*
Language-Interpretation Equipment, Church House, 562
" Lap " Steam Engine, Model of, 199*
Latham, E., the Late, 40
Lathes. See *Machine Tools*
Latin, Dr. A., on Metallurgical Examination of Lead Pressure-Cable Sheaths, 121*
Launch of M.S. " Bienheim," 187*
— Motor. See *Motor Boat*
— of Oil Tanker " British Adventure," 507
— of Orient Liner" Oronsay," 15
— and Trial Trips, 10, 44, 72, 87, 116, 140, 164, 207, 264, 304, 316, 327, 357, 392, 456, 480, 544, 580
Laurence, Scott and Electromotors, Ltd., " Speedmaster " Frequency Converters for Continuous Rolling Mill, Rogerstone, 282*
Law. See *Legal*
Lead Alloys. See *Alloys* under *Metallurgy*
— Pressure-Cable Sheaths, Metallurgical Examination of, 121*
Leak Detection in Vacuum Systems, 96
Leatherhead Research Laboratories, British Electricity Authority, 80*
Leck, J. H., on Leak Detection in Vacuum Systems, 96
Lee, Dr. H., on Effect of Cold Work on Steel, 463
Legislation. See *Legal*

Legal :

Iron and Steel Act, Debate on, 249
Merchant Ship Legislation, 550, 578
Public Utilities Street Works Bill, 87
Rivers (Prevention of Pollution) Bill, 411, 506
Road Legislation, 387
See also PARAGRAPH INDEX
Lens, Fresnel, of Dioptric Section, Efficiency of, 477
Letters to Editor, 15*, 40, 63, 112, 135, 160*, 183, 252, 290*, 331, 354, 382, 412*, 444, 476, 508, 539, 569
Lewis, L. D., the Late, 178
Leyland Motors, Ltd., Motor-Coach Chassis with Under-Floor Engine, 343*
Libraries, Aslib, Annual Conference, Programme, 177; Proceedings, 302: Future Policy, by L. Wilson, 302
Life Saving Measures and Appliances at Sea, 550, 578
Light Alloys. See *Alloys* under *Metallurgy*
— Coast, and Fog Signals in Sweden, 477
— Navigation, in United States, Use of Electric Batteries for, 274
— and Sound, Transmission in Atmosphere, Similarity Between, 118*, 477
— Velocity of, Redetermination of, 442
Lighthouse, Berck, France, Reconstruction in Prestressed Concrete, 186

Lighthouse Conference, Fourth International, Paris :

Section I. *Construction of Lighthouses :*
Fixed Structures to Replace Lighthouses, by E. Santangini, 138
Arrangement of Apparatus for Study of Wave Motion of Sea in Neighbourhood of Proposed Site of Lighthouse, by L. Vantroys, 160

Lighthouse Conference, Fourth International, Paris—*continued.*

Section I.—*continued.*
Examples of Beacon Building in Open Sea, by J. P. Bowen, 160
Construction of Sea Lighthouses Employing Prefabricated Elements, by Prof. L. Greco, 186
Use of Reinforced Concrete in Variable Thickness in the Construction of Lighthouses, by Prof. L. Greco, 186
Swedish Lighthouses Erected on Submarine Sites, by R. V. Frost, 186, 513*
Reconstruction of Berck Light Tower in Prestressed Concrete, by Prof. G. Tourry, 186

Section II. *Unattended Lightships with Automatic Control :*
Unattended Lightships in United States, by Comdr. C. E. Brush, 274

Section III. *Power Supply to Machines :*
Filling Buoys with Propane, by P. Gille, 274
Gases Used as Illuminants, by J. Bernard, 274
Electric Batteries for Lights, by Comdr. F. I. Phippeny, 274

Section IV. *Light Sources, Optical Systems and Reflections :*
Similarity Between Transmission of Sound and Light in Atmosphere, by Dr. W. M. Hampton and W. H. Willmott 118*, 477
Relation Between Visibility, International Code and Atmospheric Transmission, and its Application to Calculation of Luminous Range, by Dr. W. M. Hampton and H. Gough, 570

Section V. *Sound Signals :*
Sound Measurements at Lister Beacon, Norway, by F. Fransson and H. Hermansson, 570

Section VI. *Radio-Electric Questions :*
New Type of Incandescent Burner (" Any Gas ") to be Used in Beacon Installations, by Barbier, Benard and Turenne, 400
Electric Filament Lamps for Large Lighthouse Optics, by J. P. Bowen, 400
Standardisation of Electric Lamps for Lighthouses, by W. K. Meeks and A. G. Penny, 400
Electric Lamps for Lighthouses and Allied Projection Systems : Design and Standardisation, by F. D. Oakley, 400
Latest Developments in Electrically-Operated Marine Beacon Equipment, 400
New Principle in Design of Gas Flashers, by Prof. L. Fernandes, 477
Electric Lights and Fog Signals in Sweden, by S. Oberg, 477
Application of Condenser-Discharge Electric Lamps to Naval and Aeronautical Signalling, by J. Roger, 477
Aerial Beacons in Marine Lights, by Barbier, Benard and Turenne, 477
Safety in Coast Lighting, by Barbier, Benard and Turenne, 477
Theoretical Efficiency and Practical Efficiency of Fresnel Lens of Dioptric Section, by A. Boudon, 477
Experimental Radio Aids to Coastal Navigation and Pilotage, by N. Bell, 570
Rapid Beacons for Distance and Direction, by C. E. Granqvist, 570
Portuguese Lighthouse Department, by J. G. Ramos, 570
Synchronised Fog Signals, by D. A. Stevenson, 570
Radio Range Beacons and Synchronised Sound Signals in Finland, by U. Burmeister, 570
Radio-Telephonic Calling Devices for Lighthouses, by Lt. R. D. Fisher, 570
Remote Control of Aids to Navigation, by Lt.-Col. H. D. Seielstad, 570
Radio-Controlled Lighthouse in Sweden, by A. Holtzberg, 571
Aerial Systems for Radio Beacons, by C. Gilliam, 571

Lighthouses, Electric Lamps for, 400
— Fog Signals in, Audibility of, 118*, 477
— Italian, Methods of Construction of, 186
— as Marine Light and Aerial Beacon, 477
— Radio-Telephone Calling Devices for, 570
— Swedish, on Submarine Sites, 186, 513*
— Transmission of Sound and Light from, 118*, 477
— in United States, Fixed Structures to Replace, 138
— Utgrunden, Radio Control at, 571
— Visibility and Luminous Range in, 570
Lighting, Coast, Safety in, 477
— Equipment for 2,700-h.p. 3,000-Volt Direct-Current Locomotives, 235*
— System of House of Commons, 393*
— — Luton Factory, Vauxhall Motors, Ltd., 518*
— See also *Lamps* under *Electric*
Lightships, Unattended, in United States, 274
Lilleland Lighthouse, Sweden, 186, 515*
Lime Spreader, Agricultural, " Abbey " (Seamer Engineering Co., Ltd.), 80*
Limmet and Trinidad Lake Asphalt Co., Ltd., " Elstree Heat Planer " for Roads, 371*
Limit Gauges. See *Gauges*
Liners. See *Ships ; Steamers ; Motorships*
Liquid Fuel. See *Oil Fuel*. See also *Benzol : Motor*
Lister Beacon, Norway, Sound Measurements at, 570
Literature, 4, 28, 50, 74, 98, 124, 149, 172, 236, 267, 315, 322, 340, 368, 397, 429, 459, 524, 556. See LITERATURE INDEX
Litigation. See *Legal*
Little Barford Power Station, 41
Liverpool Street Station, Pneumatic Buffer Stop, 139*
Lloyd's Register of Shipping, Statistics of Vessels under Construction, 87, 330; Statistics of Vessels Lost, 253, 353, 539. See 100
Loader for Agricultural Tractor (J. C. Bamford), 67*
— Continuous, for Concrete Preparation (Blaw Knox, Ltd.), 369*
— Crop, " Bianch-Snook " (A. B. Bianch and Co., Ltd.), 510*
— 15-cwt. " Horn-draulic " (Steel Fabricators (Cardiff), Ltd.), 43*
— Hydraulic, Petrol-Driven " Muir-Hill " (E. Boydell and Co., Ltd.), 402*
Local Authorities. See *Municipal*
Loch Fannich Tunnel, Completion of, 242*
— Sloy Hydro-Electric Scheme, 1*, 25*, 49*, 97*, 330
Locomotive, 2-8-2 Class-WG, for Indian Government Railways, 193*
— Construction in United States, Report, 38
— Costs of Different Types, 435
— Diesel-Electric, 827-h.p., British Railways, 403*
— — Engined, 300-b.h.p., for Steelworks (Hunslet Engine Co., Ltd.), 467*
— — Engined, in United States, 38
— — Mining, Testing of, 14
— — Productivity Team's Report on, 479, 567
— Electric, for Central London Railway, 91*
— — 1,500-Volt Direct-Current, for Estoril Electric Railway, 212*
— — 2,700-h.p., 3,000-Volt Direct-Current, South African Railways, 233*
— Engineers, Institution of, Presidential Address, by R. A. Riddles, on Nationalisation and Mechanical Engineer, 435, 484
— Gas Turbines for, 216
— — Turbined, in United States, 38
— House, St. Luc Marshalling Yard, 554*
— Manufacturers Association, Conference on Productivity Team's Report, 567
— Standard, for British Railways, 326
— Standardisation on British Railways, 435, 484
— Statistics, British Transport Commission's Report, 273
— See also *Railways* in PARAGRAPH INDEX
London Building Research Congress, 1951, Arrangements for, 333
— and Home Counties, Engineering Education in, Pamphlet on, 199
— International Congress of Radiology, 87
— Northampton Polytechnic, Apparatus for Study of Flexural Centre of Open Members, 321*
— Queen Mary College, New Buildings for, 151*
— Sir John Cass College, Courses at, 251, 499
— South East, Technical College, Courses in Electrical Engineering, 252
— Transport Executive, Central London Railway, Jubilee of, 91*; Vehicle Recovery Equipment of, 454*; Replacement of Bridge Over Grand Surrey Canal, 487*
— Underground Railways. See *Underground* and *London Transport Executive*
Long Beach Harbour Light Station, 138
Longitudinal Bulkheads. See *Water-Tight Subdivision*
Lord, W. G., 300-h.p. Aluminium-Alloy Motor Launch, 103*
Lorries. See *Motor Vehicles ; Tractors*
Loudspeakers, Church House Sound-Amplifying Equipment, 562
Low, A. R., on Normal Elliptic Functions, 412. See 168
Low, J. B., the Late, 58
Loyd, V., and Co., Ltd., " Dragon " 40-h.p. Diesel-Engined Crawler Tractor, 540*
Lubrication and Analysis of Bearings (Review), 98
— Physical Aspects of, Conference on, 39
Lubricating Oils. See also *Oils*
Lubricator, Grease, Mechanical (C. C. Wakefield and Co., Ltd.), 316*
" Lucy Ashton," Hull-Resistance Research Ship, 17, 54, 161*, 573*
Luminous Range and Visibility in Lighthouses, 570
Luton Sewage, Rapid Mechanical Filtration, 506
Lydall, F., the Late, 183
Lyon, F., on Integration of Freight Transport by Road and Rail, 183. See 133. See 424
Lysaght's, J., Bristol Works, Ltd., " Redcliffe " Pig-Feeding Machine, 91*

M.

MACADAM. See *Roads*
Mac. See also *Mc*
Machine Shops. See *Works* and *Machine Tools*
— Testing. See *Testing Machine* and *Tests (Materials)*
— That Think, Giant Brains (Review), 459

Machine Tools :

Boring Machine, Tool-Room, with Optical Measuring System (H. W. Kearns and Co., Ltd.), 312*
Cutting Machine, Oxygen, for Steel Plates (British Oxygen Co., Ltd.), 128*
— — " Powder," for Metals (British Oxygen Co., Ltd.), 57*
Drill, Electric Hammer (Victor Products (Wallsend), Ltd.), 445*
— Twist, and Combined Drills and Countersinks, Specification, 155
Drilling Machine, Micro-Precision (S. N. Bridges and Co., Ltd.), 488*
— — Tube-Plate and Portable, for Boiler Work (Kitchen & Wade, Ltd.), 191*
— and Reaming Machine, for King-Pin Holes (Kitchen & Wade, Ltd.), 285*
Gear, Small and Medium, Generating Machines for, 145*, 169*. See LETTERS, 252, 291, 331, 354, 382
— — and Medium, Grinding Machines for, 145*, 169*. See LETTERS, 252, 291, 331, 354, 382
— — and Medium, Hobbing Machines for, 145*, 169*. See LETTERS, 252, 291, 331, 354, 382

Machine Tools—*continued.*

Gear, Small and Medium, Shaping Machines for, 145*, 169*. See LETTERS, 252, 291, 331, 354, 382
Hydraulic Press. See *Press* (below)
Lathe, Stub, for Large-Diameter Work (A. Herbert, Ltd.), 532*
Levelling Machine for Plates (Bronx Engineering Co., Ltd.), 362*
Limit Gauging. See *Gauges*
Machine-Shop Management. See *Works Management*
— Tools and Metrology, Modern Workshop Technology (Review), 236. See ADDENDA, 340
— — for Small and Medium Gears, 145*, 169*. See LETTERS, 252, 291, 331, 354, 382
— Work, Tolerances in. See *Gauges*
Plate-Levelling Machine, Seven-Roll (Bronx Engineering Co., Ltd.), 562*
— Shearing Machine, 72-in. (F. J. Edwards, Ltd.), 144*
Polishing Machine, Rotary, for Air-Compressor Blades (Avro (Canada), Ltd.), 114*
Press, 3,500-ton Hydraulic, for " Holoplast " Plastic Panels, 176*
Reaming and Drilling Machine for King-Pin Holes (Kitchen & Wade, Ltd.), 285*
Shearing Machine, 72-in. Precision for Plates (F. J. Edwards, Ltd.), 144*
Straightening Machine, Pneumatic, for Tyres (Stuart Davis, Ltd.), 579*
Tube-Straightening Machine Pneumatic, (Stuart Davis, Ltd.), 579*
Turning Machine for Commutator (Murad Developments, Ltd.), 466*
See also PARAGRAPH INDEX
Machine Work. See *Machine Tools*
Mackay Industrial Equipment, Ltd., Fiat Models " 52 " and " 601 " Crawler Tractors, 540*
Mackenzie, I. M., on Distribution of Temperature in Ingot Moulds, 275
Macklow-Smith, Ltd., Thrust-Measuring " Capsule " for Jet Engines, 573*
Magnel, Prof. G., on Prestressed-Steel Structures, 385
Magnesium Alloys. See *Alloys* under *Metallurgy*
Magnetic Permeability, High, in Mild-Steel Castings, Specification, 34
Mains, Electric. See *Cables* under *Electric*
Man's Use of Energy, 202, 236, 250
Management of Works. See *Works Management*
Manchester College of Technology, Mechanical Engineering Laboratories, Opening of, 475
— and District, Data on Electrical and Mechanical Engineering Lectures, 216. See LETTER, 354
— Joint Research Council, Report on Operational Research : Its Application to Peace-Time Industry, 134
Manley, C. V., on Casualties to Merchant Ships, 100
Manning, W. R. D., on Residual Contact Stresses in Built-up Cylinders, 464*; on Stresses in Tubes Due to Internal Pressure, 508. See 218.* See LETTERS, 383, 412, 476
Manometer, Electronic-Recording (Fielden (Electronics), Ltd.), 456*
— Mercury, for Measuring Mean Pressure with Respect to Time, 40
Mansergh, Vice-Admi. M. J., on Naval Aviation, 452
Manufacture, Scientific Methods in. See *Works Management*
Manure Spreader, Farmyard (Massey-Harris, Ltd.), 67*
Marchant, Prof. E. W., Election as Honorary Member of Institution of Electrical Engineers, 331
Marine Auxiliary Machinery, S.S. " Chusan," 526*, 557*
— — Machinery, Motor Collier " Portsmouth," 32*
— Boilers. See *Boilers*
— Engines. See *Engines ; Turbines ; Marine Propulsion*
— Engineers, Institute of, Safety at Sea, 1850-1950, by D. O'Neill, 550, 578; Introduction of Probationer-Student Members, 562
— Engineering Investigations by British Shipbuilding Research Association, 17, 48*, 54
— Propulsion, 100-h.p. A.E.C. Geared Diesel Engines for Motor Launch, 103*
— — 1,125-b.h.p. Clark-Sulzer Oil Engine, M.S. " Portsmouth," 32*
— — 900-b.h.p. Diesel-Electric Plant for Pilot Vessel " Sir Thomas Brocklebank," 324
— — 1,250-h.p. Eight-Cylinder, British Polar Diesel Engine, M.S. " Wandsworth," 303
— — 240-h.p. Gas Turbine for Motor Launch " Torquil " (Rover Co., Ltd.), 308*
— — 34,000-s.h.p. Geared Turbines, S.S. " Chusan," 526*
— — Geared Turbines in H.M. Ships, Experiences with, 539
— — Heavy-Duty Oil Engines for, 31
— — Oil Fuel for. See *Oil Fuel*
— — Rolls-Royce Jet Engines, Research Ship " Lucy Ashton," 17, 54, 161*, 573*
— — Steam Turbine Parts, Surface Finish of, 30, 55
— — 15,000-kW Turbo-Electric Plant, S.S. " New Australia," 153
— — See also *Engines ; Turbines ; Propellers ;* and PARAGRAPH INDEX
— Terminal for Fawley Oil Refinery, 563
— Turbines. See *Turbines, Steam ; Marine Propulsion*
Maritime Structures, Winds and Waves (Review), 124
" Mark VF," Crawler Tractor, with Bray Hydraulic Angledozer, 18*
Markets. See *Trade* and PARAGRAPH INDEX
Markham Traction, Ltd., " Midget " Tipping Trailer, 68*
Marshall, C. W., on Telephonic and Radio Interference from High-Voltage Systems, 103

Marshall, Sons & Co., Ltd., Diesel-Driven Variable-Weight Road Roller, 370*
Marshall, Prof. W. T., on Relaxation Methods Applied to Flat Slabs, 239*
Marshalling Yard, Railway, St. Luc, Montreal, 553*
"Marvel" Oat Crusher, 478*
Masonry Railway Bridges, Design of, 509
Massey-Harris, Ltd., Farmyard Manure Spreader, 67*; Agricultural Folding Rake, 478*
Materials, Strength of. See *Stress* and *Tests (Materials)*
Mathematics, Bessel Functions, Tables of (Review), 322
— Binomial Probability Distribution, Tables of (Review), 236
— Exponential-Integral Functions, Generalised Tables of (Review), 430
— Function $\sin \phi/\phi$, Tables of (Review), 340
— Normal Elliptic Functions (Review), 168. See LETTER, 412
Mather & Platt, Ltd., 3,750-kVA Alternator and 625-kW Generators for Paper Mill, 209*
"Matrix" Interferometer, 243*. See LETTER, 412*
Matthew, Prof. T. U., on Engineering Production, 486. See 309, 351
Mavor & Coulson, Ltd., Conveyor Plant for Loch Sloy Hydro-Electric Scheme, 3*
Maxwell, J. Clerk, and Theory of Indeterminate Structures, 194*. See LETTER, 252
May, R., on Corrosion in Sea-Water Systems in H.M. Ships, 291; on Jet Impingement Apparatus for Assessment of Corrosion by Sea Water, 291
McAlpine, Sir R., & Sons, Ltd., Stourport "B" Power Station, 286*. See LETTERS, 383, 508
M'Ewen, Prof. E., on Farm Mechanisation and Agricultural Engineer, 262. See 356
McFarlane, J., on Effect of Core Properties on Defects of Instrument Transformers, 184*
McLaren, J. & H., Ltd., 16-h.p. Diesel-Driven Pumping Set, 446*; 176-b.h.p. Eight-Cylinder Diesel Engine, 446*
McLellan, P. & W., Ltd., Pipe Line for Tummel-Garry Hydro-Electric Scheme, 462*, 493*; Aluminium Bridge Over River Tummel, 524
Mc. See also *Mac*
Meadows, H., Ltd., 80-b.h.p. Four-Cylinder Diesel Engine, 254*; 130-b.h.p. Six-Cylinder Horizontal Diesel Engine, 344*
Mean Pressure in Heavy-Duty Oil Engines, 31
Measuring System, Optical, for Boring Machine (Hilger & Watts, Ltd.), 312*
Measurement of Work, Survey of, 251

Mechanical Engineers, Institution of :

Awards under Clayton and Manville Bequest, 87
London Meetings, Winter Session :
Annual Dinner, 353
Standardisation of Steam Turbo-Generating Plant, by I. V. Robinson. 449*
Hawksley Lecture on Supercharging in Internal-Combustion Engines, by Sir H. R. Ricardo, 433*, 481*. See 411
Naval Gearing—War Experience and Present Development, by Cmdr. (E) J. H. Joughin, 539
Industrial Administration and Engineering Production Group :
Some experiments on Tapping, by E. Johnson, 507
Screws and Tapping, by C. Eatough, 507
Mechanical Engineers, Training of, 413
— Engineering, Advanced Courses at Birmingham University, 124
— — Congress, International, Brussels, Programme, 135
— Lubricator. See *Lubricator*
Mechanics, History of (Review), 267
— Soil, Influence in Civil Engineering, 302, 419
— — and Road Foundations, 345
Mechanisation in Quarries, Examples of, 568
Meeks, W. K., on Standardisation of Electric Lamps for Lighthouses, 400
Melenreuss Weir, Wassen Hydro-Electric Scheme, 305*
Memorials to Engineers in Westminster Abbey, 332
— to Sir Charles Parsons in Westminster Abbey, 317, 359
— Tablet, Centenary, on Britannia Tubular Bridge, 357*
Mena-al-Ahmadi Jetty, Suspended Gravity Fenders for, 5
Menai Straits, Britannia Tubular Bridge Over, Construction of, 205
Merchant Ships. See *Ships; Steamers; Motorships*
— Shipbuilding. See *Shipbuilding*
Merryweather & Sons, Ltd., 125-b.h.p. Diesel-Engined Fire Appliance, 150*; Mobile Extending Ladder, 280*
Mersey Docks and Harbour Board, Motor Pilot Vessel "Sir Thomas Brocklebank," 324*
Merz & McLellan, Tummel-Garry Hydro-Electric Scheme, 425*, 460*, 493*, 521*
Metal, Aircraft, Effect of Low Temperatures on, 357
— for Communications Apparatus, Researches on, 296
— Corrosion of. See *Corrosion*
— Creep and Plastic Deformation in, 372
— Foil, Beta-Ray Thickness Gauge for (Baldwin Instrument Co.), 128

Metals, Institute of :

Autumn Meeting, Bournemouth :
Programme, 179
Inaugural Proceedings, 250
Reports of Discussions, 291, 341, 372, 398
Visits and Excursions, 341, 373, 399
Autumn Lecture on Communications Metallurgy, by E. E. Schumacher, 296. See 250, 291
Corrosion and Related Problems in Sea-Water Cooling and Pipe Systems in H.M. Ships, by Dr. I. G. Slater, L. Kenworthy and R. May, 291

Metals, Institute of—*continued.*

Autumn Meeting, Bournemouth—continued.
Method of Assessing Relative Corrosion Behaviour of Different Sea Waters, by T. H. Rogers, 291
Jet-Impingement Apparatus for Assessment of Corrosion of Moving Sea Water, by R. May and R. W. de V. Stacpoole, 291
Pitting Corrosion in Copper Water Pipes Caused by Films of Carbonaceous Material Produced During Manufacture, by H. S. Campbell, 291
Stress Corrosion of Aluminium-7 per cent. Magnesium Alloy, by E. C. W. Perryman and S. E. Hadden, 341
Theory of Mechanism of Stress Corrosion in Aluminium-7 per cent. Magnesium Alloy, by Dr. P. T. Gilbert and S. E. Hadden, 341
Relationship Between Ageing and Stress Corrosion Properties of Aluminium-Zinc Alloys, by E. C. W. Perryman and J. C. Blade, 341
Flow of Zinc Under Constant Stress, by Prof. A. H. Cottrell and Dr. V. Aytekin, 372
Mechanism of Primary Creep in Metals, by Dr. W. A. Wood and R. F. Scrutton, 372
Mechanism of Creep as Revealed by X-Ray Methods, by Dr. G. B. Greenough and Mrs. E. M. Smith, 372
Some X-Ray Observations on Nature of Creep Deformation in Polycrystalline Aluminium, by E. A. Calnan and B. D. Burns, 372
Atomic Displacements Associated with Elasticity in Plastically-Deformed Metals, by Dr. W. A. Wood and N. Dewsnap, 372
Calculation of Activation Energies of Recovery and Recrystallisation from Hardness Measurements on Copper, by Dr. N. Thorley, 373
New Continuous Brass Mill of Scovill Manufacturing Company, Waterbury, Connecticut, U.S.A., by J. J. Hoben and J. F. Muiney, 398
Pressure-Welding Characteristics of Some Copper-Base Alloys, by E. Davis and E. Holmes, 399
Metal, Non-Ferrous, Corrosion by Sea Water, 291
— "Powder Cutting" Machines for (British Oxygen Co., Ltd.), 57*
— Railway Bridges, Design of, 465
— in Service of Mankind Exhibition, Science Museum, 39
— Structure of. See *Microphotographs*
— Welding. See *Welding*
— See also *Metallurgy; Microphotographs*
Metallography. See also *Metals; Metallurgy; Microphotographs*
Metallurgists, Institution of, "Metals in Service of Mankind" Exhibition, 39

Metallurgy :

Alloy, Aluminium and Magnesium, for Aeroplane Structures, 259*
— — 7 per cent. Magnesium, Stress-Corrosion of, 341
— — R.R. 59, at Elevated Temperature, Creep Due to Fluctuating Stresses in, 189*
— — Riveting of, 467
— — Zinc, Ageing and Stress-Corrosion of, 341
— Copper-Base, Pressure Welding of, 399
— Ferrous and Non-Ferrous for Aircraft, Effect of Low Temperatures on, 357
— for Use in Gas Turbines, Conference Programme, 221; Postponement of Conference, 242
— Iron-Nickel, Structural Transformations in, 492
— Lead, Creep and Fatigue of, 296
— — for Pressure-Cable Sheaths, Metallurgical Examination of, 121*
— Light, for Aeroplane Structures, 259*
— Magnesium and Aluminium, for Aeroplane Structures, 259*
— Used in Telephone Equipment, 296
Blast Furnaces. See *Furnaces*
Cast Iron. See *Cast Iron*
Coke Ovens. See *Coke Ovens*
Corrosion of Metals. See *Corrosion*
Foundry. See *Foundry*
Furnaces, Electric. See *Furnaces*
— Metallurgical. See *Furnaces*
Heat Treatment of Bars, Tubes, Sections, and Strip, Automatic Vertical-Slot Furnace for, 198*
Iron Manufacture. See *Furnaces, Blast*
— Ore. See *Ore*
Metals, Tests of. See *Tests (Materials)*
Metallurgical Education, Joint Committee's Report on, 353
— Trends in Production of Steel Plates, 453
Metallurgy, Advanced Courses at Birmingham University, 124
Rolling Mills. See *Rolling Mills*
Slag in Basic Open-Hearth Process, Sulphur in, 447
Steel Furnaces. See *Furnaces*
Welding. See *Welding*
See also *Iron and Steel Institute; Metals, Institute of; Microphotographs; Foundry;* and PARAGRAPH INDEX
Metallurgy and Mining, Institution of. See *Mining*
"Meteor" Ground-Attack Aircraft, 238*
"Meteor N.F.11" Night-Fighting Aeroplane, 218*
Meteorology, Weather Effect on Road Surfaces, 345
— — and Behaviour of Ships, 65, 69*, 74, 93*
Meter, Pressure, for Open-Hearth Furnace (Tinsley (Industrial Instruments), Ltd.), 374
Methane Explosions. See *Accidents*
Metrology and Machine Tools, Modern Workshop Technology (Review), 236. See *Addenda*, 340
Metropolitan-Vickers Electrical Co., Ltd., Engineering Courses for Educationists, 82; 2,700-h.p., 3,000-volt Direct-Current Locomotives, 233*; 300-kV X-Ray Equipment, 245*; Self-Balancing Instruments for Process Industries, 297*; 10-Million Electron-Volt Linear Accelerator, 333; 7·5-MW Alternator, Pitlochry Power Plant, 521*
— See also *London*
Microfilm Readers (Edison Swan Electric Co., Ltd.), 364*
Micrometers, External, Specification, 246
Microphones, Church House Sound-Amplifying Equipment, 562
Microphotographs, Lead and Lead-Alloy Pressure-Cable Sheaths, 121*
Microstructure of Metals. See *Microphotographs*
Middlesex County Council, 125-b.h.p. Diesel-Engined Fire Appliance, 150*
"Midget" Trailer (Markham Traction, Ltd.), 68*
Military Engineering Experimental Establishment, Model of Concertina Bridge, 5
— Motor Transport. See *Motor Vehicle*
Mills, C. A., Model of James Watt's "Lap" Engine, 199*
— Rolling. See *Rolling Mills*
Milner, Dr. C. J., on Cold-Cathode Mass Spectrometer Leak Detector, 96
Mines, Coal. See *Collieries*
— and Quarries, Inspectors of, Report for 1939-1949, 568
— Safety in, Research on, Annual Report, 1948, 14
— United States Bureau of. See *United States*
— Winding. See *Winding*
— Wire Ropes in, Conference on, 515
— See also *Coal; Collieries; Mining; Ores; Winding;* and PARAGRAPH INDEX
Minehead Beacon, Construction of, 160
Mineral Oils. See *Oils*
— See also *Coal; Mining; Ores;* and PARAGRAPH INDEX
Mining and Metallurgy, Institution of, Conference on Wire Ropes in Mines, 515
— See also PARAGRAPH INDEX
Ministry of Health. See *Health*
— of Labour and National Service. See under *Labour*
— of Supply. See *Supply*
— of Transport. See *Transport*
Mixing Machines, Concrete. See *Concrete*
Model of Concertina Bridge for Tanks, 5
— Electrically-Generating Windmill for Orkneys, 5
— Engineer Exhibition, London, 135
— Experiments. See *Aeronautics: Tank Experiments*
— and Experimental Engineers, Society of, New Headquarters, 423
— Investigations of Ventilation System for House of Commons Debating Chamber 165*
— of James Watt's "Lap" Steam Engine, 199*
— of Owen Falls Hydro-Electric Scheme, Uganda, 28
— of Silvertown Factory of Venesta, Ltd., 28
— Suspended Gravity Fenders, 5
— Tests of Britannia Tubular Bridge, 205
— of Venturi Open-Hearth Furnace, 374*
Mohr, Prof. O., on Principle of Reciprocal Deflection, 197. See LETTER, 252
"Monarch of Bermuda," S.S., Fire Damage to, 152*
Monoplane. See *Aeronautics*
Mono-Rail Transporter (Road Machines (Drayton), Ltd.), 445*
Montreal, St. Luc Railway Marshalling Yard, 553*
Moore, J. T., on Large Steam Turbo-Generating Plant, 79
Morris Commercial Cars, Ltd., 3-ton Motor Lorry, 342*
Morrison, Prof. J. L. M., on Stresses in Tubes Due to Internal Pressure, 383. See 218*. See LETTERS, 412, 476, 508
Motor Boat, 300-h.p. Aluminium-Alloy Launch (Sussex Shipbuilding Co., Ltd.), 103*
— — "Torquil," 60-ft., Launch with Gas Turbine (Rover Co., Ltd.), 308*

Motor Car Details :

Axle Stabilising Gear, 150*
Brake "Fading," Machine for Investigation of, 9*
Chassis, Mark IV (Crossley Motors Ltd.), 343*
— With Rear Engine (Fodens Ltd.), 344*
— for Semi-Trailer Passenger Vehicle, 162*
— with Underfloor Engine (A.E.C., Ltd.), 343
— with Underfloor Engine (Leyland Motors, Ltd.), 343*
— with Underfloor Engine (Sentinel (Shrewsbury) Ltd.), 343
Engines. See *Engines, Petrol, Motor Car*
Motor-Car Engines. See *Engines, Petrol*
— — 60-b.h.p. Four-Wheel Drive, for British Services, 104*
— — Fuels. See *Motor Fuels*
— — Manufacture, Luton Works of Vauxhall Motors, Ltd., 518*
— — Military. See *Motor Vehicles*
— — Parks, Underground, Fires and Explosions in, 442
— — Steel Tubes for, Specification, 534
— — See also *Motor Vehicles* and PARAGRAPH INDEX
— Carriages, Railway. See *Carriages*
— Coach Chassis with Under-Floor Engine (A.E.C., Ltd.), 343
— — Chassis with Under-Floor Engine (Leyland Motors, Ltd.), 343*
— Collier. See *Motorship*
— Commercial, Transport Exhibition, International, Earl's Court, 254*, 283*, 342*
— Electric, Alternating-Current, Dynamic Braking of, 528*
— — for Continuous Rolling Mill, Rogerstone, 265*, 281*, 337*
— — 450-h.p. Direct-Current, for 2,700-h.p. Locomotives, 233*
Motors, Electric, for 1,500-Volt Direct-Current Locomotive, 212*
— — Induction, Slip-Ring, Liquid Controller for (General Electric Co., Ltd.), 21*
— — Plate Rolling-Mill, Amplidyne Control Equipment for (British Thomson-Houston Co., Ltd.), 95*
— — Traction for 827-h.p. Diesel-Electric Locomotive (British Thomson-Houston Co., Ltd.), 404*
— Fire Appliance. See *Fire Appliance*
— Fuel Industry, German, During 1939-45, 182
— — for Supercharged Engines, 411, 433*, 481*
— Grader, Diesel-Driven, Aveling-Austin (Aveling-Barford, Ltd.), 401*
— Industries Research Association's Laboratories, Work of, 8*
— Internal-Combustion. See *Aeronautics; Engines; Motors Cars; Motor Boats; Tractors*
— Launches. See *Motor Boats*
— Lorries. See *Motor Vehicles*
— Marine. See *Engines; Marine Propulsion; Motorships*
Motor Manufacturers and Traders, Ltd., Society of, Commercial Transport Exhibition, 254*, 283*, 342*
— Omnibus Chassis with Rear Engine (Fodens, Ltd.), 344*
— — Chassis with Underfloor Engine (Sentinel (Shrewsbury) Ltd.), 343*
— — Frame and Super-Structure, Investigations on Strains in, 9*
— — Mark IV Chassis for (Crossley Motors, Ltd.), 343*
— — Semi-Trailer, for Passenger Transport (R. A. Dyson & Co., Ltd.), 162*
— — Recovery Equipment, London Transport Executive, 454*
— Paraffin. See *Engines, Oil*
— Petrol. See *Aeronautics; Engines, Petrol: Motor Boats; Motor Cars; Tractors*
— Pilot Vessel "Sir Thomas Brocklebank," 324*
— Road Rollers. See *Road Rollers*
— Spirit. See *Motor Fuel*
— Tipper, Four-Wheel Drive, "Mountaineer" (Scammell Lorries, Ltd.), 285*
— — 7-ton Bedford (Vauxhall Motors, Ltd.), 255*
— Tractors. See *Tractors*
— Transport on British Roads, 345*, 387*
— Truck, Dump, 15-cwt., Petrol-Driven (Road Machines (Drayton), Ltd.), 444*
— Vehicle, 2-ton "Bantam," Chassis for (Karrier Motors, Ltd.), 256*
— — on British Roads, Statistics, 345*, 387*
— — Military, Internal-Combustion Engines for, 415, 450
— — Military, Report of Select Committee on Estimates, 159
— — 3-ton (Morris Commercial Cars, Ltd.), 342*
— — Recovery Equipment of London Transport Executive, 454*
— — "Sturdy Star" Chassis for (Transport Equipment (Thornycroft), Ltd.), 285*, 342*
— — Tipping, Four-Wheel Drive, "Mountaineer" (Scammell Lorries, Ltd.), 285*
— — Tipping 7-ton Bedford (Vauxhall Motors, Ltd.), 255*
— — Trailers. See *Trailers*
— — Wheels, Test Rig for Measuring Strains in, 8*
— — See also *Motor Coach; Motor Omnibus*
— Wagons. See *Motor Vehicles; Tractors*
Motorship "Blenheim," Launch of, 187*
— Collier "Portsmouth," 32*
— Under Construction, Lloyd's Statistics, 87, 330
— Launch of. See *Launch*
— Legislation Relating to, 550, 578
— Lost, Lloyd's Statistics, 253, 353, 539
— Pilot Vessel, "Sir Thomas Brocklebank," 324*
— "Scythia," Reconditioning of, 226
— "Wandsworth," "Stone-Kamewa" Reversible-Pitch Propeller of, 303*
— "Wanstead," Design of, 30, 64
— "Wendover," Design of, 30, 64
— "Woodford," Design of, 30, 64
— See also *Marine Propulsion*
Moulds, Ingot, Distribution of Temperature in, 275
Moulding. See *Foundry*
Moult, Dr. E. S., on Centrifugal Compressors for Aircraft Gas Turbines, 511
"Mountaineer" Four-Wheel Drive Motor Tipper, 285*
Mowlem, J., & Co., Ltd., Reconstruction of House of Commons, 393*
"Muir-Hill" Petrol-Driven Hydraulic Loader, 402*
Mullard Electronic Products, Ltd., Valve Impedance Testing Set, 56*
Muiney, J. F., on Brass Rolling Mill at Waterbury, Connecticut, U.S.A., 398
Multi-Lingual Announcing Equipment (General Electric Co., Ltd.), 392*
— — Announcing Equipment (Tannoy Products, Ltd.), 562
Multitubular Boilers. See *Boilers*
Municipal Services and Public Works Congress and Exhibition. See *Public Works and Municipal Services Congress and Exhibition*
Murad Developments, Ltd., Turning Machine for Commutator, 466*
Murton Colliery, Durham, Koepe Winding System at, 516
Museum of Science and Industry, Birmingham, Model of James Watt's "Lap" Engine, 199*
— — South Kensington, "Metals in Service of Mankind" Exhibition, 39; Centenary of Submarine Telegraphy Exhibition, 201. See *Erratum*, 333

N.

NASH, H. R., Ltd., Three-Wheeled Petrol-Driven Roller Tractor, 541*
National Coal Board, Reports and Accounts, 1949, 13. See *Erratum*, 71; on Plan for Coal, 381, 410
— Fire Service, Annual Report, 1947, 289
— Foundry College, Courses at, 359
National Gas and Oil Engine Co., Ltd., Six-Cylinder 900-b.h.p. Diesel Engine for Diesel-Electric Pilot Vessel, 324
— Institute of Agricultural Engineering, Study of Haymaking Methods, 317
— Oceanographic Council, Grant of Royal Charter to, 353
— Physical Laboratory, Exhibits at Institution of Civil Engineers Conversazione, 5; High-Speed Aerodynamic Research at, 21*, 45*; Model Investigation of Ventilation System for House of Commons, 165*; Creep Due to Fluctuating Stresses at Elevated Temperatures, by H. J. Tapsell, P. G. Forrest and G. R. Tremain 189*; "Matrix" Interferometer for Testing Measuring Gauges 243*. See LETTER, 412*; Production of Combination Angle Gauges, by C. H. Knoyle, 417*; Redetermination of Velocity of Light, by Dr. L. Essen, 442
— Radio Exhibition, Birmingham, 251
— Science Centre, Government Proposals, 411
— — Centre, Government Aid in Forming, 475
Nationalisation of Iron and Steel Industry, Parliamentary Debate, 249
— and Railway Mechanical Engineer, 435, 484
Naval Aeronautics. See *Aeronautics*

Naval Architects, Institution of:

Joint Meeting with Institution of Engineers and Shipbuilders in Scotland and North East Coast Institution of Engineers and Shipbuilders, Newcastle-upon-Tyne:
Inaugural Proceedings, 16
Reports of Discussions, 16, 29, 64, 74, 100
Visits and Excursions, 101
Research on Design of Drifters, by Dr. J. F. Allan, 17, 29
Surface Finish of Marine-Engine Parts, by Profs. A. S. T. Thomson and A. W. Scott, and W. Ferguson and G. B. Stabler, 30
New Cargo-Liner Design, by E. H. Watts, 30, 64
Work of British Shipbuilding Research Association—The First Six Years, by Sir M. Denny, 48*, 54. See 16.
Design of Seakindly Ships, by J. L. Kent, 69*, 93*. See 65, 74
Hull Design by Laminar Flow, by Dr. J. L. Taylor, 75
Further Examination of Casualities to Merchant Ships Reported Abandoned, Foundered or Missing, by C. V. Manley, 100

Naval Architecture, Water-Tight Subdivision of Ships. See *Water-Tight*
— Construction. See *Warships*
— See also *Warships*
Navigation, Aerial. See *Aeronautics*
— Aids to, Remote Control of, 570
— Coastal, and Pilotage, Radio Aids to, 570
Navvy. See *Excavator*
Navy, British. See *H.M.* under *Warships*
— See also *Naval; Warships;* and PARAGRAPH INDEX
"New Australia," Turbo-Electric Liner, Reconstruction of, 152*
— Cross Gate Station, Colour-Light Signalling at, 436*
— — Replacement of Railway Bridge at, 487*
— Zealand State Hydro-Electric Department, Annual Report, 538
Newcomen Society, Autumn Meeting at High Wycombe, 331
Newton & Co., Ltd., Profile Projector, 192*
Newton Victor, Ltd., 300-Volt X-Ray Equipment, 245*
Nickel, Effect of Transformation in Iron-Nickel Alloys, 492
Nile Basin (Review), 368
Niles, Prof. A. S., on Clerk Maxwell and Theory of Indeterminate Structures, 194*. See LETTER, 252
"Nimonic 90," Gas-Turbine Blading Alloy, 168; "Nimonic 80," Creep Properties, 189*
"No-Fines" Concrete, Strength of, 398*
Noise in Heavy-Duty Oil Engines, Sources of, 31
Nomograms, Plane, Superposed, Theory of (Review), 368
Non-Conducting Coverings. See *Heat Insulating Materials*
— Ferrous Metals. See *Metals; Metallurgy*
Normal Elliptic Functions (Review), 168. See LETTER, 412
Norris, Henty and Gardners, Ltd., 112-b.h.p. Six-Cylinder Horizontal Diesel Engine, 344*
North British Locomotive Co., Ltd., 2-8-2 Class-W.G. Locomotives, 193*; 827-h.p. Diesel-Electric Locomotive, 403*
— East Coast Institution of Engineers and Shipbuilders, Annual Report, 411; Joint Meeting, Newcastle-upon-Tyne. See *Naval Architects, Institution of*
— Notes from, 11, 35, 59, 83, 107, 131, 155, 179, 247, 327, 349, 377, 407, 439, 470, 503, 535, 565. See PARAGRAPH INDEX
— of Scotland Hydro-Electric Board, Loch Sloy Hydro-Electric Scheme, 1*, 25*, 49*, 97*, 330; Model of Windmill for Orkneys, 5; Annual Report, 39; Loch Fannich Tunnel, 242*; Tummel-Garry Scheme, 425*, 460*, 493*, 521*
— Thames Gas Board, 1,390-kW Pass-Out Steam Turbine, 346*
Northampton Polytechnic, London, Evening Courses for Engineers, 247; Apparatus for Study of Flexural Centre of Open Members, 321*
Northern Aluminium Co., Ltd., Continuous Rolling Mill, Rogerstone, 265*, 281*, 337*
Norway, Lister Beacon, Sound Measurements at, 570
Notched-Bar Tests. See *Tests (Materials)*
Notes on New Books. See *Books* and LITERATURE INDEX
— See *Cleveland; North; South-West; South Yorkshire; Labour.* See also PARAGRAPH INDEX
Nottingham University, Refresher Courses for Works and Plant Engineers, 139
Nuclear Energy for Power Production, 225
Nuffield Foundation, Annual Report on Scientific Research, 39
Nuffield Mechanisations, Ltd., British Light Car for Services, 104*
Nut, Hexagon Die, Specification, 405
Nuts, D. A., on Vibration of Gas-Turbine Blades, 323*. See LETTERS, 444, 476, 539
Nuttall, E., Sons & Co. (London), Ltd., Tunnel and Surge Shaft for Loch Sloy Hydro-Electric Scheme, 27*

O.

OAKLEY, P. D., on Design and Standardisation of Electric Lamps for Lighthouses, 400
Oat Crusher, "Marvel" (E. H. Bentall & Co., Ltd.), 478*
Oberg, S., on Lights and Fog Signals in Sweden, 477

Obituary:

Brook, G. B., 355
Bunn, S. C., 384
Christie, J. D., 384
Cunningham, Dr. E., 111
Drury, F. E., 413
Forrest, F., 444
Frost, R., 355
George, Sir E. J., 385
Gill, Sir F., 332*
Good, P., 476, 499
Haas, A. L., 252
Hankins, Dr. G. A., 355
Johnson, J. H., 508
Kingcome, Engr. Vice-Adml. Sir J., 64
Latham, E., 40
Lewis, L. D., 178
Low, J. B., 58
Lydall, F., 183
Osborn, F. M., 384
Peacock, J., 384
Peel, F., 508
Reid, H. C., 64
Roberts, D. E., 88*
Scott, C. C., 539
Wilmshurst, T. P., 355
Wright, Col. Sir W. C., 159
Ocean Terminal Building, Southampton Docks, 6*, 111, 129*
Oceanographic Council, National, Grant of Royal Charter to, 353
O.E.E.C., Conference on Wind Power, 381
Oil Engines. See *Engines, Oil; Motor Cars; Motor Boats; Tractors*
— Fuel Burners for Lighting Boilers, Stourport "B" Power Station, 286*
— — and Pulverised Coal. See *Colloidal Fuel*
— Methods of Analysis of, Specification, 106
— Motors. See *Engines, Oil; Motor Vehicles; Motor Boats; Tractors*
— Refinery, Fawley, Building and Equipment of, 563*
— Seal Treating Unit for Hydrogen-Cooled Turbo-Generator, Stourport "B" Power Station, 287*
— Separator for Boiler Feed-Water (G. & J. Weir, Ltd.), 117*
— Switches. See *Switchgear*
— Tanker, S.S. "British Adventurer," Launch of, 507
— — Under Construction, Lloyd's Statistics, 87, 330
— — Launches and Trial Trips, 10, 44, 72, 87, 116, 140, 164, 207, 264, 316, 327, 357, 392, 456, 480, 544, 580
— Tractors. See *Tractors*
— Vegetable, Specification, 58
— See also *Lubrication; Petroleum*
Oiler, Constant-Level (Denco Engineering Services, Ltd.), 24*
Olands Södra Grund Lighthouse, Sweden, 186, 515*
Old Centralians, Consideration of Technological Education, by Sir R. Southwell, 537
Olding, J., & Co., Ltd., John Deere 18-h.p. Crawler Tractor, 43*; 180-b.h.p. Diesel-Engined Tractor, 371*; "Elstree Heat Planer" for Roads, 371*
Oliver, K. L., on Machine Tools for Small Gears, 291, 331. See 145*, 169*. See LETTERS, 252, 354, 382
Olsen, F., Steamship Co., Launch of M.S. "Bienheim," 187*
Olympia. See *Exhibition*
Omnibus, Motor. See *Motor Omnibus*
— Trolley. See *Trolley-Bus*
O'Neill, D., on Safety at Sea, 1850-1950, 550, 578
Ontario, Power Developments in, 112
Open-Hearth Furnace. See *Furnace*
"Operational" Research in Industry, Report on, 134
Optical Measuring System for Boring Machine (Hilger & Watts, Ltd.), 312*
— Testing by National Bureau of Standards, 102
Optics, Applied, Instruction in, Imperial College of Science and Technology, 82
Ordnance. See *Guns*
Ore-Iron, Discharging Plant, Tyne Dock, 159
— — Lump, Reduction of, 253
"Orenda" Jet Aeroplane Engine, 270*
Orient Steam Navigation Co., Launch of S.S. "Oronsay," 15
Orkneys, Electricity-Generating Windmill for, Model of, 5
"Oronsay," Orient Liner, Launch of, 15
Osborn, F. M., the Late, 384
Ovens, Coke. See *Coke Ovens*
Overhead Lines, Power Transmission, in France, 529
— — Power Transmission, Machinery for Construction of, 261*
— — Power Transmission, New Zealand, 538
— — Power Transmission, Present and Future Switchgear for, 226
— — Power Transmission on Railways, Inspection Vehicle for (Drewry Car Co., Ltd.), 423*
— — Power Transmission at Very High Voltages, 61
Owen Falls Hydro-Electric Scheme, Uganda, Model of, 28
Oxford, Royal Agricultural Society Show, 17*, 41*, 65*, 88*
Oxy-Acetylene Welding. See *Welding*

P.

"P.III" Research Aircraft, 468*
Packaging, Printing and Allied Trades Association, Annual Report, 507
"Packman" Potato Harvester, 391*
"Packman" Potato Planter, 90*
Pakistan, United Kingdom Industrial Mission to, Report, 330
"Pamcol" Reversible Plough, 510*
Panels, Plastic, "Holoplast," Production of (Holoplast, Ltd.), 176*
"Panther" Self-Tying Agricultural Baler, 89*
Pantograph for 2,700-h.p. 3,000-Volt Direct-Current Locomotives, 234*
Paper for "Holoplast" Plastic Panels (Aylesford Paper Co., Ltd.), 176*
— Mill, 4,000-kW Pass-Out Steam Turbine, 209*
Paraffin Engines. See *Engines, Oil*
— Tractors. See *Tractors*
Paris District, Extra High-Voltage Cables in, 319*
— International Conference on Calculating Machines, 151
— — Conference on High-Tension Networks. See *High-Tension Networks, International Conference, Paris*
— — Internal-Combustion Engine Congress, 1951, Arrangements, 438
— — Lighthouse Conference. See *Lighthouse Conference, International, Paris*
— Underground Railway, Jubilee of, 15
Parkeston Quay Station, Harwich, Multi-Lingual Announcing Equipment, 392*
Parkinson, Sir L., & Co., Ltd., 100-ton Trailer for Transport of Drag-Line Excavators, 457*
Parks, Motor-Car, Underground, Fires and Explosions in, 442
Parliament, Engineering Features of House of Commons, 393*
Parr, G., on Author and Publisher, 279. See 237
Parsons, Sir C., Memorial in Westminster Abbey, 317, 359
— Turbines. See *Turbines, Steam; Marine Propulsion*
Passenger Aeroplane. See *Aeroplane* under *Aeronautics*
— Steamers. See *Steamers*
Peace-Time Industry, Operational Research in, Report on, 134
Peacock, J., the Late, 384
Pearson, H., on Axial-Flow Compressors for Aircraft Gas Turbines, 511
Peattie, J. D., on Operation of Power Stations, 53, 79
Pedestrians and Road Problems, 387*
Peel, F., the Late, 508
Pellowe, E. F., on Corrosion Resistance of Galvanised Window Frames, 276
Peninsular & Oriental Steam Navigation Co., S.S. "Chusan," 489*, 526*, 557*
Penny, A. G., on Standardisation of Electric Lamps for Lighthouses, 400
Percival Aircraft, Ltd., "P.56" Training Aircraft, 270*
Perforated Plate, Industrial, Specification, 534
Perkins, F., Ltd., Portable Diesel-Engined Power Plant, 443*; 32-b.h.p. Three-Cylinder Diesel Engine for Ferguson Tractor, 479*
Permanent Way, Maintenance of Rail Joints, 572
Perryman, E. C. W., on Stress-Corrosion of Aluminium-Magnesium Alloy, 341; on Ageing and Stress-Corrosion of Aluminium-Zinc Alloys, 341
Personal, 10, 34, 58, 82, 106, 130, 154, 178, 222, 246, 271, 295, 326, 348, 376, 406, 438, 470, 502, 534, 564
"Peter Standen" Beet Harvester, 65*
Petrol Motors. See *Aeronautics; Engines, Petrol; Motor Cars; Motor Boats; Tractors*
— Tractors. See *Tractors*
Petroleum, Automatic Control Valves for, Specification, 502
— Industry, Steel Butt-Welded Fittings for, Specification, 106
— See also *Oil: Engines, Oil*
Pfeil, Dr. L. B., on Isothermal Transformation Diagrams of En Steels, 491
Philip & Son, Ltd., Motor Pilot Vessel "Sir Thomas Brocklebank," 324*
Phillips, J. M., On Productivity in Metal Pressing, 112. See 86
Phippeny, Comdr. F. I., on Electric Batteries for Navigation Lights, 274
Photographs, Schlieren, of Supersonic Flow Round Aerofoil, 45*
Photomicrographs. See *Microphotographs*
Physical Laboratory. See *National Physical*
— Testing by National Bureau of Standards, 102

Physics, Institute of:

Manchester Section:
Conference on Physical Aspects of Lubrication, 39

Physics, Institute of—*continued.*

Midland Branch:
Conference and Exhibition on Vacuum Physics:
Review of Modern Vacuum Pumps, by D. R. Goddard, 95
Review of Vacuum Gauges, by W. Steckelmacher, 96
Recent Advances in Vacuum Coating Plant and Techniques, By L. Holland, 96
Accelerator Vacuum Systems, with Particular Reference to 30-ft. Synchroton, by L. Riddiford, 96
General Principles of Leak Detection, by J. H. Leck and J. Biears, 96
Development and Application of Cold-Cathode Spectrometer Detector, by Dr. C. J. Milner, 96

Physics Laboratory, British Iron and Steel Research Association, 374*
— Light, Velocity of, Redetermination of, 442
— of Lubrication, Conference on, 39
— Nuclear Energy for Power Production, 225
— Relativity, Meaning of (Review), 4
— Sun as Emitter of Radio Waves, 443
— Vacuum, Conference and Exhibition, 96
— See also PARAGRAPH INDEX
Piers for Railway Bridges, 542
Pig-Feeding Machine, "Redcliffe" (J. Lysaght's Bristol Works, Ltd.), 91*
Piles, Atomic, Low-Power, International Declassification Conference, 443
Pilotage and Coastal Navigation, Radio Aids to, 570
Pinions. See *Gears; Gearing; Marine Propulsion*
Pipe Fittings for Sprinklers, Specification, 130
— Flow of Gas in, Experiments on, 277* 333,
— Line, Loch Sloy Hydro-Electric Scheme, 1*, 26*, 49*, 330
— — Tummel-Garry Hydro-Electric Scheme, 462*, 493*
— — Wassen Hydro-Electric Scheme, 305*, 313*
— Systems, Sea-Water, Corrosion in, 291
— See also *Tubes*
Piston for Heavy-Duty Oil Engines, 31
— Ring for Motor-Vehicle Engines, Investigations on, 8*
Pitlochry Hydro-Electric Plant, 496*
Pitot Tube for Gas-Flow Experiments, 277*, 333
Pitting. See *Corrosion*
Planetarium for Armagh, Ireland, 63
Planing and Heating Machine, "Elstree," 44-b.h.p. Diesel-Engined, for Roads (J. Olding & Co., Ltd.), 371*
Plant Transporter, 3-ton "Winget-Loicde" (Winget, Ltd.), 401*
— and Works Engineers, Refresher Courses at Nottingham University, 139
Planter, Potato, "Packman" (Modern Designs, Ltd.), 90*
— — "Smallford" (Tractor Shafts Co., Ltd.), 20*
Plastic Deformation in Metals, 372
— Panels, "Holoplast," Production of (Holoplast, Ltd.), 176*
Plate-Levelling Machine. See *Machine Tools*
— Perforated, Industrial, Specification, 534
— Rectangular, Pure Bending of, Experiments on, 51*, 76*
— Shearing Machine. See *Machine Tools*
— Ship, Brittle Fracture in, 290*
— Steel, Metallurgical Trends in Production, 453
— — Pure Bending of, Experiments, 52*, 76*
Playne, E., New Building at Queen Mary College, 151*
Plough & Agricultural Machinery Co., Ltd., "Pamcol" Reversible Plough, 510*
— for Agricultural Tractors, 263, 389*
— Deep-Digger Tractor-Mounted (Ford Motor Co., Ltd.), 478*
— Reversible "Pamcol" (Plough & Agricultural Machinery Co., Ltd.), 510*
Plummer Blocks, Ball and Roller-Bearing, Specification, 106
Plywood, Work on, by Forest Products Research Board, 110
Polish University College, London, Mechanical Engineering Department, 464
Polishing Machine, Rotary, for Air-Compressor Blades (Avro (Canada), Ltd.), 114*
Pollution, Atmospheric, by Works, Prevention, of, 158
— Water, Research Board, Report for 1949, 506
Polytechnic. See *Education*
Pneumatic Buffer Stop (G. Turton Platts & Co., Ltd.), 139*
— Tools. See *Machine Tools*
Portable Engine. See *Engine*
— Machine Tools. See *Machine Tools*
Portland Cement. See *Cement*
"Portsmouth," Motor Collier, 32*
Portugal, Estoril Electric Railway, 1,500-Volt Direct-Current Locomotive, 212*
Portuguese Lighthouse Department, Activities of, 570
Post-Hole Digger (H. Ferguson, Ltd.), 42
— — Digger (Transplanters (Robot), Ltd.), 541*
Potato-Harvesting Machine, 318, 391*
— Planter, "Packman" (Modern Designs, Ltd.), 90*
— — "Smallford" (Tractor Shafts Co., Ltd.), 20*
Potentiometer. See *Electric*
"Powder Cutting" Machines for Metals, 57* (British Oxygen Co., Ltd.), 57*
Power Conference, World. See *World Power Conference*
— Frequency Systems, Industrial Capacitators for, Specification, 246
— Plant, Diesel-Engined Portable (F. Perkins, Ltd.), 443*
— — Hydro-Electric, Developments in Ontario, 112
— — Hydro-Electric, in France, 529
— — Hydro-Electric, Goulburn River, Australia, 382
— — Hydro-Electric, Grudie Bridge, Loch Fannich Tunnel, 242*
— — Hydro-Electric Handbook (Review), 315
— — Hydro-Electric, Loch Sloy, 1*, 25*, 49*, 97*, 330

Power Plant, Hydro-Electric, North of Scotland, Report on, 39
— — Hydro-Electric, Owen Falls, Uganda, Model of, 28
— — Hydro-Electric, Possibilities in Pakistan, 330
— — Hydro-Electric, Tummel-Garry, 425*, 460*, 493*, 521*
— — Hydro-Electric, Wassen, Switzerland, 305*, 313*
— — See also *Power Stations; Power, Water; Substations*
— Press. See *Machine Tools*
— Production from Nuclear Energy, 225
— Stations, Electric, British Electricity Authority Annual Report, 473
— — Electric, Clarence Dock, Completion, 381
— — Electric, at East Greenwich Gasworks, 499
— — Electric, Emission of Fumes and Grit from, Prevention of, 158
— — Electric, in France, 529
— — Electric, Gas Turbines for, 215
— — Electric, Kingsbury Colliery, 1,250-kW Mixed-Pressure Turbo-Generators, 243*
— — Electric, Little Barford, 41
— — Electric, New Zealand, 538
— — Electric, Operation of, 53, 79
— — Electric, Present-Day Practice, Switchgear for, 226
— — Electric, Productivity Report on, 409
— — Electric, South African, Statistics, 183
— — Electric, Standardisation of Turbo-Generators for, 449*
— — Electric, Stourport "B," 286*. See LETTERS, 333, 508
— — Electric, Uskmouth, Caisson Sinking, 88
— — See also *Power Plants; Substations*
— Supply, Electric, Birtley Cable Factory, 375
— — Electric, British Electricity Authority, Annual Report, 473
— — Electric, for Continuous Rolling Mill, Rogerstone, 265*, 281*, 337*
— — Electric, Economics of, 5, 29
— — Electric, Efficiency of Utilisation, 552
— — Electric, in Europe, Problems of, 353
— — Electric, in France, 529
— — Electric, in France, Extra High-Voltage Cables for, 319*
— — Electric, Industry, Problems of, 4
— — Electric, Industry, Statistics for 1948 and 1949, 379
— — Electric, in Large Chemical Factories, 573
— — Electric, Luton Factory, Vauxhall Motors, Ltd., 518
— — Electric, in New Zealand, 538
— — Electric, in Pakistan, 330
— — Electric, for Paper Mill, 209*
— — Electric, for Power Stations, 450
— — Electric, Present-Day Practice in Switchgear for, 226
— — Electric, Aid to Productivity, 412
— — Electric, Productivity Report on, 409
— — Electric, in South Africa, Annual Report, 183
— — Electric, Telephonic and Radio Interference from, 103
— — Electric, from Wind Power, Conference on, 381
— Transmission, Overhead Lines, in France, 529
— — Overhead Lines, Machinery for Construction of, 261*
— — Overhead Lines, New Zealand, 538
— — Overhead Lines, Present and Future, Switchgear for, 226
— — Overhead Lines, on Railways, Inspection Vehicle for (Drewry Car Co., Ltd.), 423*
— — Overhead Lines, for Very High Voltages, 61
— — See also *Gearing; Marine Propulsion*
— Water, Possibilities in Pakistan, 330
— — See also *Hydraulics; Power Plants, Hydro-Electric; Turbines, Hydraulic*
— Wind, for Electricity Supply, Conference on, 381
— as World Problem, 202, 236, 250
"PR56" Training Aeroplane, 270*
Practice, Codes of, Ministry of Works. See *Standards*
"President" 8/10-h.p. Agricultural Tractor, 41*
Presidential Address to British Association, by Sir H. Hartley, on Man's Use of Energy, 202, 236, 250
— — to British Association, Section G (Engineering), by Prof. A. Robertson, on Bridge Engineering a Century Ago, 205. See 237
— — to British Electrical Power Convention, by Sir V. de Ferranti, on Electricity-Supply Industry, 4
— — to Diesel Engine Users Association, by Major-Gen. A. E. Davidson, on Early Akroyd Oil Engines, 415, 450
— — to Institution of Civil Engineers, by Dr. W. H. Glanville, on Roads of Great Britain, 345*, 387*
— — to Institution of Electrical Engineers, by Sir A. J. Gill, on Telephonic Developments, 331, 352
— — to Institution of Engineers and Shipbuilders in Scotland, by Prof. G. Cook, on Higher Technological Training, 419
— — to Institution of Locomotive Engineers, by R. A. Riddles, on Nationalisation and Mechanical Engineer, 435, 484
— — to Royal Society, by Sir R. Robinson, on National Research, 475
— — to West of Scotland Iron and Steel Institute, by W. Barr, on Metallurgical Trends in Production of Steel Plates, 453
Press. See *Machine Tools*
Pressed Metal Industry, Productivity Team of, Report on Visit to United States, 86. See LETTER, 112
Pressure Charging in Heavy-Duty Oil Engines, 31
— Mean, in Heavy-Duty Oil Engines, 31
— Vessels, Steel for, Specification, 10
"Prestwick Pioneer" Mark 2 Passenger Aeroplane, 218*
Priest Furnaces, Ltd., Annealing Furnaces for Aluminium Strip, 338
Printing, Packaging and Allied Trades Association, Annual Report, 507
Printing Trade, Dispute in, 202, 213, 225, 289, 301, 317, 329
Producer, Water-Gas, at East Greenwich Gasworks, 499
Production Engineers, Institution of, Lincoln Sub-Section Converted into Independent Section, 34; Formation of Liverpool Graduate Section, 34; Survey of Work Measurement, 251
— Engineering, Measurement and Analysis of, 309, 334, 351, 421, 486, 561. See 251
— — Research Association, Annual Report, 15; Road Vehicle Advisory Panel, 251; Courses for Foremen, 357; Work of, 412
— in Internal-Combustion Engine Industry, Methods and Incentives, 62
Productivity, Electricity as Aid to, 412
— Report on Diesel-Locomotive Industry, 479, 567
— — on Electricity Supply, 409
— Team of Pressed Metal Industry, Report on Visit to United States, 86. See LETTER, 112
Profile Projector (Newton & Co., Ltd.), 192*
Profilometer, for Wiredrawing Dies, 374*
Projector, Profile (Newton & Co., Ltd.), 192*
Propane, as a Filling for Navigation Buoys, 274
Propeller, Reversible-Pitch, "Stone-Kamewa" (J. Stone & Co., Ltd.), 303*
Propulsion of Ships. See *Marine Propulsion; Engines; Turbines; Propellers*
Prospection, Géophysique (Review), 556
Prosser, L. E., on Model Investigation of Ventilation System for House of Commons, 165*
"Proteus Lincoln" Aeroplane, 239*
Psychologist's View of Presentation of Technical Information, 213, 237
Public-Address Systems, Church House, 562
— Utilities Street Works Bill, 87
— Works and Municipal Services Congress and Exhibition, Olympia, 183, 369, 401*, 444*
Publishers and Authors, Relations Between, 237, 279
Pumps, Air. See *Air Compressors*
— Feed, Stourport "B" Power Station (G. & J. Weir, Ltd.), 287
— Fin Tilting, S.S. "Chusan," 557*
— Heat, Stourport "B" Power Station, 287. See LETTERS, 333, 508
— Vacuum, Design and Performance of, 95
Pumping Plant for House of Commons, 396*
— Set, 16-h.p. Diesel-Driven (J. & H. McLaren, Ltd.), 446*
Purification of Sewage. See *Sewage*
Puttock, M. J., on Interferometer for Testing Measuring Gauges, 412*. See 224*
Pye, Ltd., Cambridge, Works of, 40

Q.

QUARRIES and Mines, Inspectors of, Report for 1939-1949, 568
Quasi-Arc Co., Ltd., Stress-Relieving and Pre-Heating of Welded Joints, 392
Quebec, Arvida Bridge, Cold Riveting of Aluminium on, 141*
Queen Mary College, London, New Buildings for, 151*

R.

RADAR, Effect on Safety at Sea, 578
Radio Aids to Coastal Navigation and Pilotage, 570
— — to Navigation, Effects on Safety at Sea, 578
— Beacons, Aerial Systems for, 571
— — for Distance and Direction at Sea, 570
— — and Sound Signals in Finnish Seas, 570
— Control at Utgrunden Lighthouse, 571
— Equipment, Small Power Transformers and Chokes for, 401
— Exhibition, National, Birmingham, 251
— Industry Council, Standard Specifications for Radio Components, 59
— Interference from High-Voltage Systems, 103
— Research by British Broadcasting Corporation, 81
— Signals, Automatic Monitoring Recorder for (Simon Sound Service), 263
— Telephone Calling Devices for Lighthouses, 570
— Waves, Sun as Emitter of, 443
— See also *Television: Radar: Valves, Thermionic*
Radiology, International Congress of, London, 87
Rail Joints, Improvements in, 572
Railroads, American, Association of, Report on Locomotive Construction, 39
— Structures, Modern (Review), 50
— See also *Railways*
Railway Bridge. See *Bridge*
— British, Ocean Terminal Building, Southampton, 6*, 111, 129*; Ministry of Transport's Requirements and Recommendations for (Review), 50; Pneumatic Buffer Stop, 139*; British Transport Commission's Report, 273; Standard Locomotives for, 226; Centenary Memorial Tablet on Britannia Tubular Bridge, 357*; Multi-Lingual Announcing Equipment at Harwich, 392*; 827-h.p. Mixed-Traffic Diesel-Electric Locomotive, 403*; Inspection Vehicle for Overhead Electric Lines, 423*; Standardisation on, 435, 484; Colour-Light Signalling on Southern Region, 436*; Bridge Construction on, 465, 509, 542, 571; Research Department, Organisation of, 475, Research Organisation for, 427, 507; Apprenticeship in, 485; Replacement of Bridge Over Grand Surrey Canal, 487; Trials of Double-Deck Trains, 517
— Canadian Pacific, St. Luc Marshalling Yard, 553*
— Carriage. See *Carriages*
— Central London, Jubilee of, 91*
— City and South London, Jubilee of, 556
Railway Congress, International, Rome:
Programme, 111
Inaugural Proceedings, 447
Visits and Excursions, 447
Papers and Reports, 465, 509, 542, 571
Section I.—*Ways and Works:*
Modern Tendencies in Building of Railway Structures, Especially Bridges; Results Obtained in Construction of Railway Bridges in Reinforced Concrete; and Future Prospects of Pre-Stressed Concrete, 465, 509, 542, 571
Section II.—*Permanent Way:*
Rail Joints; Use of Long Welded Rails; Optimum Length of Rails; Expansion Gaps; Standard Allowances, 572
Railway, Estoril Electric, Portugal, 1,500-Volt Direct-Current Locomotive, 212*
— Glasgow and South Western, Centenary, 418
— Indian Government, 2-8-2 Class-W.G. Locomotives for, 193*
— Locomotive. See *Locomotive*
— Mechanical Engineer and Nationalisation, 435, 484
— Practice, Application of Tapered-Roller Bearings to, 115. See *Erratum*, 186
— Road and Inland Waterways, Integration of Freight Services by, 424
— — Integration of Freight Transport by, Statement on, 133. See LETTER, 183
— Rolling Stock. See *Rolling Stock; Carriages; Locomotives; Wagons*
— Signalling. See *Signalling*
— Swiss Federal, Wassen Power Station, 305*, 313*
— Tube. See *Underground; London Transport Executive*
— Underground. See *Underground; London Transport Executive*
— Wagons. See *Wagons*
— See also *Railroads* and PARAGRAPH INDEX
Raine, E. N., on Machine Tools for Small Gears, 354. See 145*, 189*. See LETTERS, 252, 291, 331, 382
Rake, Folding, Agricultural (Massey-Harris, Ltd.), 479*
Ramos, J. G., on Portuguese Lighthouse Department, 570
Ransomes, Sims & Jefferies, Ltd., Tractor-Mounted Deep-Digger Plough, 478*
Rays. See *X-Rays*
Rayleigh, Lord, on Principle of Reciprocal Deflection, 197. See LETTER, 252
Readers, Microfilm (Edison Swan Electric Co., Ltd.), 364*
Ready Reckoner, Scientists' (Review), 28
Recorders, Earth-Pressure, 5
— Monitoring, Automatic, for Radio Signals (Simon Sound Service), 263
Recording Instruments, Electric, Self-Balancing, 297*
"Redcliffe" Pig-Feeding Machine (J. Lysaght's Bristol Works, Ltd.), 91*
Redpath, Brown & Co., Ltd., Steelwork for House of Commons, 393*
Reduction Gears. See *Gears: Gearing: Marine Propulsion*
Reference Books. See *Annuals*
Refinery, Oil, Fawley, Building and Equipment of, 563*
Refrigerating Plant, S.S. "Chusan," 528*
Refrigerators, Freon, at House of Commons, 395*
Regulators, Voltage, Automatic, 362*
Reheating Furnace. See *Furnace*
Reid, H. C., the Late, 64
Reinforced Concrete. See *Concrete*
Relativity, Meaning of (Review), 4
Relaxation Methods Applied to Flat Slabs, 239*
Renault, Ltd., 35-h.p. Petrol-Engined Agricultural Tractor, 541*
Rendel, Palmer & Tritton, 2-8-2 Class-W.G. Locomotives for India, 193*
Report, Accident to Tudor V Aircraft, 463
— and Accounts, National Coal Board, 1949, 13. See *Erratum*, 71
— Annual, Advisory Council on Scientific Policy, 109
— — Alkali, etc., Works, 158
— — Association of Consulting Engineers, 159
— — British Cast Iron Research Association, 469
— — British Council, 251
— — British Electricity Authority, 473
— — British Transport Commission, 273
— — British Welding Research Association, 87
— — City and Guilds of London Institute, 475
— — Electricity Supply Commission of South Africa, 183
— — Fire Research Board, 441
— — Gauge and Tool Makers' Association, 159
— — International Association for Exchange of Technical Students, 382
— — Ministry of Works, 1949, 181
— — National Fire Service, 1947, 289
— — New Zealand State Hydro-Electric Department, 538
— — North East Coast Institution of Engineers and Shipbuilders, 411
— — North of Scotland Hydro-Electric Board, 39
— — Nuffield Foundation, 39
— — Printing, Packaging and Allied Trades Association, 507
— — Production Engineering Research Association, 15
— — Safety in Mines Research, 1948, 14
— Diesel-Locomotive Industry, 479, 567
— Educational and Training Schemes for Electrical Technicians, 443
— Explosion in "Viking" Air Liner, 341
— Forest Products Research Board, 1939-1947, 110
— Fuel Research, 1939 to 1946, 505
— Future Development of Higher Technological Education, 381, 537
— German Coal-Tar and Benzole Industries, 1939-45, 182
— Inspectors of Mines and Quarries, 1939-1949, 568
— Internal-Combustion Engine Productivity Team's Visit to United States, 62
— International Union of Electricity Producers and Distributors, Congress of, 1949, 87
Report, Joint Committee on Metallurgical Education, 353
— Locomotive Construction in United States, 38
— Ministry of Civil Aviation, 1948-49, 507
— Operational Research in Industry, 134
— Productivity, on Electricity Supply, 409
— — Team of Pressed-Metal Industry, 86. See LETTER, 112
— Sixth, Select Committee on Estimates, 159
— United Kingdom Industrial Mission to Pakistan, 330
— Water Pollution Research Board, 1949, 506
Research, Aerodynamic, High-Speed, at National Physical Laboratory, 21*, 45*
— Aeronautical, Vibration-Testing Equipment for (de Havilland Propellers, Ltd.), 203*
— Association, Cast Iron, British, Extension of Laboratories, 34; Annual Report, 469
— — Internal-Combustion Engine, British, Formula for Stiffness of Crankshafts of Oil Engines, 204*. See *Errata*, 232
— — Iron and Steel, British, Physics Laboratory, 374*
— — Motor Industries, Laboratories of, Work of, 8*
— — Production Engineering, Annual Report, 15; Road Vehicle Advisory Panel, 251; Work of, 412
— — Shipbuilding, British, Work of, 16, 48*, 54; Hull-Resistance Research Ship "Lucy Ashton," 17, 54, 161*, 573*
— — Welding, British, Annual Report, 87; Pulsating-Pressure Testing Plant for Pressure Vessels, 384*
— Building, Congress, London, 1951, Arrangements for, 333
— in Building Industry, Official Report on, 182
— Board, Building, Mounting of Roller-Mirror Extensometer, 172*
— — Fire, Annual Report, 441
— — Forest Products, Reports (1939-1947), 110
— — Fuel, Report on Work in 1939-46, 505
— — Water Pollution, Report for 1949, 506
— Co-operative, Industrial, Survey of, 85
— Council, Arid Zone, Interim International Search for Desert Water Resources, 569
— — Canadian National, Investigations on Aircraft De-Icing, 178
— Department, British Railways, Organisation of, 475, 507
— — Engineering, British Broadcasting Corporation, Work of, 81
— — Scientific and Industrial, Chemical Research Laboratory, 7*; and Grant-Aided Associations, Economic Aspects of, 85; Work on Fuel Research, 1939-46, 505
— and Development Equipment, Aircraft, Fairey Aviation Co., Ltd., 430*
— for Galvanising Industry in Past 20 Years, 276
— Gas-Turbine, Air Compressor Using Water for, 485
— Hydraulic, International Association for, Bombay Meeting, 135
— Laboratory, Chemical, Teddington, Work of, 7*
— — Leatherhead, British Electricity Authority, 80*
— — Road, Earth-Pressure Recorders, 5; Work of, 345*, 387*; Adhesion of Chippings and Tar on Roads, 421
— in Manufacture of Electrical Equipment, 543
— Operational, in Industry, Report on, 134
— Organisation, British Transport Commission, 475, 507
— — Fire, Joint, Electrical-Analogue Apparatus for Testing Fire-Resisting Structures, 3
— and Presentation of Technical Information, 228, 237
— Safety in Mines, Annual Report, 1948, 14
— Scientific, Annual Report of Nuffield Foundation, 39
— Ship, Jet-Propelled, "Lucy Ashton," 17, 54, 161*, 573*
— on Work Measurement, 309, 310*, 351, 561
— See also *National Physical Laboratory*
Reservoir, Loch Sloy Hydro-Electric Scheme, 1*, 330
— Tummell-Garry Hydro-Electric Scheme, 425*, 521*
— for Wassen Hydro-Electric Scheme, 305*, 313*
Resistance Welding. See *Welding*
Resistivity of Steel, Effect of Cold Working on, 463
"Resomax-300" X-Ray Equipment, 245*
Retarders, Hump, for Goods Wagons, St. Luc Marshalling Yard, 554*
Reuss River, Switzerland, Wassen Power Station on, 305*, 313*
Reviews. See LITERATURE INDEX
Rex 78, Alloy Creep Properties, 189*
Rheologists Club, British, Conference on Physical Aspects of Lubrication, 39
Ricardo, Sir H. R., on Supercharging in Internal-Combustion Engines, 411, 433*, 481*
Richardson, Dr. F. D., on Deoxidation of Steel, 414; on Sulphur in Basic Open-Hearth Process, 447
Riddiford, L., on Accelerator Vacuum Systems, 96
Riddles, R. A., on Nationalisation and Mechanical Engineer, 435, 484
Rigid-Frame Bridge (Review), 283. See *Erratum*, 573
Rings, Piston. See *Piston Rings*
River Goulburn, Dam, Victoria, Australia, 382
— Nile and Tributaries, Measured Discharges of (Review), 368
— (Prevention of Pollution) Bill, 411, 506
— Reuss, Switzerland, Wassen Power Station on, 305*, 313*
Riveting, Aluminium-Alloy, in Aircraft Structures, 467
— Cold, of Aluminium, Developments of, 141*
Road Accidents. See *Accidents*
— Their Alignment, Layout and Construction (Review), 340
— Chippings and Tar on, Adhesion Between, 421
— of Great Britain, Problems of, 345*, 387*

Road Machines (Drayton), Ltd., 15-cwt. Dump Motor Truck, 444* ; Mono-Rail Transporter, 445*
— Mixtures, Bituminous, Sampling of, 405
— Rail and Inland Waterways, Integration of Freight Services by, 424
— — Integration of Freight Transport by, Statement on, 133. See LETTER, 183
— Research Laboratory, Earth-Pressure Recorders, 5 ; Work of, 345*, 387* ; Experiments on Adhesion of Chippings and Tar on Roads, 421
— Roller, Variable-Weight Diesel-Driven (Marshall, Sons & Co., Ltd.), 370*
— — Vibrating, 2½-h.p. Petrol-Driven (Stothert & Pitt, Ltd.), 440*
— Traction, Railless Electric. See *Trolley Bus*
— Traffic Arteries, International, Proposed, 434
— Vehicle Advisory Panel, Production Engineering Research Association, 251
Roberts, D. E., the Late, 88*
Roberts, Dr. G., on Bridge Engineering To-day and To-morrow, 237
Robertson, Prof. A., on Bridge Building a Century Ago, 205. See 237
Robertson, W. H. A., & Co., Ltd., Plant for Continuous Rolling Mill, Rogerstone, 281*, 337*
Robinson, I. V., on Standardisation of Steam Turbo-Generating Plant, 449*
Robinson, Sir R., on a National Science Centre, 475
Rockets and Assisted Take-off Units for Aircraft, 575*
Rods, Wrought Aluminium, Specification, 58
Roe, A. V., & Co., Ltd., "707 B" Research Aircraft, 217*, 238 ; "Ashton" Research Aircraft, 468*
Roe, A. V. (Canada), Ltd., "Orenda" Jet Aeroplane Engine, 270*
Roger, J., on Electric Lamps for Naval and Aeronautical Signalling, 477
Rogers, T. H., on Corrosion Behaviour of Different Sea Waters, 291
Rogerstone, Continuous Rolling Mill for Aluminium Strip, 265*, 281*, 337*
Rolls, Plate-Levelling. See *Machine Tools*
Roller Bearings. See *Bearings*
— Road. See *Road Roller*
Rolling and Casting of Ingots, Time Studies, 275
— Mill, Automatic Control System for, 362*
— — Brass, of Scovill Manufacturing Co., 398
— — Continuous, for Aluminium Strip, Rogerstone, 265*, 281*, 337*
— — Plate, Amplidyne Control Equipment for Electric Motors, 95*
— Stock for Budapest Underground Railways, 517
— — Standardisation on British Railways, 435, 484
— — Statistics, British Transport Commission's Report, 273
— — See also *Carriages ; Locomotives ; Wagons*
— of Thin Foils, 296
Rome, International Railway Congress. See *Railway Congress, International, Rome*
Röntgen Rays. See *X-Rays*
Roofs, Railway-Station Platform, Design of, 542
Root Harvester, Fordson (Ford Motor Co., Ltd.), 19*
Ropes, Wire. See *Wire Ropes*
Rotary Engine. See *Engine : Aeronautics*
Rotary Hoes, Ltd., Tractor-Mounted Rotary Cultivator, 478*
— Pump. See *Pump*
Rotor for 22,667-kVA Alternator, 495*
— for 7·5-MW Alternator, 522
Rover Co., Ltd., 60-ft. "Torquil" Motor Launch, with Gas Turbine, 308*
Royal Aeronautical Society. See *Aeronautical*
— Agricultural Society. See *Agricultural*
— Aircraft Establishment. See *Aeronautics*
— Charter, Grant to National Oceanographic Council, 353

Royal Institution :

Recollections of R. Cory, 411
Sun as Emitter of Radio Waves, by Sir E. Appleton, 443

Royal Ordnance Factories, 50-ton "Centurion" Tank, 325*

Royal Society :

National Science Centre, Proposals for, 411, 475
Award of Medals, 438
Rutherford Memorial Fund Appeal, 443
Presidential Address on National Research by Sir R. Robinson, 475

Royal Society of Arts. See *Arts*
— United Service Institution, Naval Aviation, by Vice-Admi. M. J. Mansergh, 452 ; Influence of Late War on Tank Design, by Brig. O. E. Chapman, 474. See LETTER, 569
Rubber Transmission Belting, Specification, 376
Rugby Portland Cement Co., Ltd., Communication System for, 483
Russell, A. E., on Aeroplane Structures, 257*. See 302
Rust-Removing Process, Jenolite, 532
Rusting. See *Corrosion*
Ruston & Hornsby, Ltd., Development of 1,070-h.p. Gas Turbine, 533*. See *Addendum*, 569
Rutherford, Lord, Memorial Fund Appeal, 443

S.

SACKS, Textile, Packaging Code, 155
Safety in Coast Lighting, 477
— of Life at Sea. See *Life-Saving ; Water-Tight Subdivision*
— in Mines Research, Annual Report, 1948, 14
— Regulations in American Mining Industry, 301
— at Sea, 1850-1950, 550, 578
Saint. See *St.*
Salford Electrical Instruments, Ltd., 200-kV Schering Bridge for High-Voltage Laboratory, 208*. See *Erratum*, 263
Sampling of Bituminous Road Mixtures, 405
Sams, C. E. R., on Reform in Spelling, 444
Santangini, E., on Fixed Structures to Replace Lighthouses, 138
"Sapphire Meteor" Jet-Engined Aeroplane, 238*
Saunders, Dr. H. L., on Reduction of Lump Ores, 253
Saunders, Prof. O. A., on Gas Turbines for Aircraft, 293*. See 270
Savage, L. H. W., on Ingot Heat Conservation, 275
Savory, L. E., on Experiments with Hartmann Acoustic Generator, 99*, 136*
"SB3" Anti-Submarine Aircraft, 269*
Scammell Lorries, Ltd., "Explorer" Six-Wheel Drive Tractor, 284* ; "Mountaineer" Four-Wheel Drive Motor Tipper, 285*
Schering Bridge, 200-kV, for High-Voltage Laboratory (Salford Electrical Instruments, Ltd.), 208*. See *Erratum*, 263
Schlieren Photographs of Supersonic Flow Round Aerofoil, 45*
Schofield Travel Scholarships, First Awards, 246
Scholarships. See *Education*
Schumacher, E. E., on Communications Metallurgy, 296. See 250, 291
Science Centre, National, Government Proposals, 411
— — National, Government Aid in Forming, 475
— Museum, South Kensington, "Metals in Service of Mankind" Exhibition, 39 ; Centenary of Submarine Telegraphy Exhibition, 201. See *Erratum*, 333
— and Presentation of Technical Information, 228, 237
Scientific Apparatus, Exhibition, Institution of Civil Engineers, 5, 28
— Cryptography, 444
— Instrument Manufacturers Association of Great Britain, Ltd., Electronics Symposium and Exhibition, Programme, 185
— — Testing by National Bureau of Standards, 102
— Management. See *Works Management*
— Policy, Advisory Council on, Annual Report, 109
— Research. See *Research*
— Societies. See *Institutions*
Scientists' Ready Reckoner (Review), 28
Scotland, Institution of Engineers and Shipbuilders in. See *Engineers*
Scotland, North, Hydro-Electric Board, Loch Sloy Hydro-Electric Scheme, 1*, 25*, 49*, 97*, 330 ; Model of Windmill for Orkneys, 5 ; Annual Report, 39 ; Loch Fannich Tunnel, 242* ; Tummel-Garry Scheme, 425*, 460*, 493*, 521*
Scott, Prof. A. W., on Surface Finish of Marine-Engine Parts, 30
Scott, C. C., the Late, 539
Scott, Sir G. G., House of Commons Ventilation System, 165* ; House of Commons Architecture, 393*
Scottish Aviation, Ltd., "Prestwick Pioneer" Mark 2 Passenger Aeroplane, 218*
Scovill Manufacturing Co., Brass Rolling Mill, 398
Screw Propellers. See *Propellers*
— Threads, Buttress, Specification, 420
— — Cycle, Specification, 246
— — and Tapping, 507
Scrutton, R. F., on Mechanism of Primary Creep in Metals, 372
"Scythia," M.S., Reconditioning of, 226
Sea, Safety at, 1850-1950, 550, 578
— Water Pipe Systems, Corrosion in, 291
— Wave Motion of, Apparatus for Study of, 160
Sealing Ends of Extra High-Voltage Cables, 319*
Seamer Engineering Co., Ltd., "Abbey" Agricultural Lime Spreader, 89*
Secondary Battery. See *Accumulator* under *Electric*
Sections, Wrought Aluminium, Specification, 58
Seddon, A. E., on Performance and Mounting of Roller-Mirror Extensometer, 172*
Selelstad, Lt.-Comdr. H. D., on Remote Control Aids to Navigation, 570
Self, Sir H., on Economics of Electricity Supply, 5, 29
Sentinel (Shrewsbury), Ltd., Motor Omnibus Chassis with Underfloor Engine, 343*
Separators, Cyclone, Pressure Drop in, 63. See LETTER, 354
— Oil, for Boiler Feed Water (G. and J. Service Aviation. See *Aeronautics*
Servicing Development Establishment, Royal Air Force Central, 569
Sewage, Luton, Rapid Mechanical Filtration of, 506
— See also PARAGRAPH INDEX
Shaft, Crank. See *Crankshaft*
— and Holes, Fitting of. See *Gauges*
Shaw Savill and Albion Co., Ltd., S.S. "New Australia," 152*
Shear Tests. See *Tests (Materials)*
Shearing Machine. See *Machine Tools*
Shell Caribbean Petroleum Co., Ltd., 300-h.p. Aluminium-Alloy Motor Launch, 103*
Ship Canal. See *Canal*
— Cargo, Design of, 30, 64
— Under Construction, Lloyd's Statistics, 87, 330
— Design for Laminar Flow, 75
— Diesel-Engined. See *Motorships : Marine Propulsion*
— Electric Propulsion. See *Marine Propulsion*
— Launching. See *Launch*
— Legislation Relating to, 550, 578
— Lost, Lloyd's Statistics, 253, 353, 539
— Merchant, Casualties to, 100
— Model Experiments. See *Tank Experiments*
— Motor. See *Motorships ; Marine Propulsion*
— Plates, Brittle Fracture in, 290*
— Propellers. See *Propellers*
— Propulsion. See *Marine Propulsion ; Engines ; Turbines ; Propellers*
— Research, Jet-Propelled, "Lucy Ashton," 17, 54, 161*, 573*
— Seakindly, Design of, 65, 69*, 74, 93*
Ships, Water-Tight Subdivision of. See *Water-Tight*
— See also *Marine ; Motorships ; Shipping ; Steamers ; Warships ;* and PARAGRAPH INDEX
Shipbuilders and Engineers, North-East Coast Institution of. See *North-East Coast*
— — in Scotland, Institution of. See *Engineers*
Shipbuilding, S.S. "Chusan," 489*, 526*, 557*
— S.S. "Chusan," 489*, 526*, 557*
— Design of Seakindly Ships, 65, 69*, 74, 93*
— Hull Design for Laminar Flow, 75
— Institutions Joint Meeting, Newcastle-upon-Tyne. See *Naval Architects, Institution of*
— Launch of M.S. "Blenheim," 187*
— — of Oil Tanker "British Adventurer," 507
— — of S.S. "Oronsay," 15
— — and Trial Trips, 10, 44, 72, 87, 116, 140, 164, 207, 264, 304, 316, 327, 357, 392, 456, 480, 544, 580
— Legislation Relating to, 550, 578
— Motor Collier "Portsmouth," 32*
— S.S. "New Australia," 152*
— New Cargo Liner Design, 30, 64
— Pilot Vessel "Sir Thomas Brocklebank," 324*
— Research Association, British, Work of, 16, 48*, 54 ; Hull-Resistance Research Ship "Lucy Ashton," 17, 54, 161*, 573*
— Steel Plates for, 453
— Vessels Under Construction, Lloyd's Statistics, 87, 330
— Water-Tight Subdivision. See *Water-Tight*
— See also *Steamers ; Naval ; Warships* and PARAGRAPH INDEX
Shipping, Casualties to Merchant Ships, 100
Shock Tests. See *Impact Tests* under *Tests (Materials)*
Shop Management. See *Works Management*
Short Brothers, Ltd., Centenary of, 424
Short Brothers and Harland, Ltd., "SB3" Anti-Submarine Aircraft, 269*
Shovel, Tractor-Operated (J. Allen & Sons (Oxford), Ltd.), 445*
Show. See *Exhibition*
Siemens and General Electric Railway Signalling Co., Ltd., Colour-Light Signalling Equipment for British Railways, 436*
— Martin Furnaces. See *Furnaces*
Signals, Fog, and Coast Lights in Sweden, 477
— — in Lighthouses, Audibility of, 118*, 477
Signalling, Colour-Light, on British Railways, Southern Region, 436*
— Naval and Aeronautical, Electric Lamps for, 477
Silicon Iron for Cores of Instrument Transformers, Properties of, 184*
Silvertown Factory, Venesta Ltd., Model of, 28
Simon-Carves, Ltd., Coke-Oven Plant, East Greenwich Gasworks, 475, 499*
Simon Sound Service. Automatic Monitoring Recorder for Radio Signals, 263
Simonson, W. F., on Boiler Plant, Present and Future, 79
"Simplex" Agricultural Acid Sprayer, 89*
Sin ϕ/ϕ Function, Tables of (Review), 340
Sir John Cass College, London, Courses at, 251, 499
"Sir Thomas Brocklebank," Motor Pilot Vessel, 324*
"Skipdozer" Concreting and Backfilling Tractor, 520*
Slabs, Flat, Freely-Supported, Relaxation Methods Applied to, 239*
Slag. See *Metallurgy*
Slater, Dr. I. G., on Corrosion in Sea-Water Systems in H.M. Ships, 291
Sloman, H. A., on Deoxidation of Iron, 414
Sludge. See *Sewage*
"Smallford" Potato Planter, 20*
Smart's Aerator and Turner (Taskers of Andover (1932), Ltd.), 42*
Smelting Furnaces. See *Furnaces*
Smith, Engr.-Capt. E. C., on Memorials to Engineers, 382 ; on Centenary of W. Sturgeon, 465
Smith, Mrs. E. M., on Mechanism of Creep as Revealed by X-Ray Methods, 372
Smith, Sir F., on Sir C. Parsons, 317 359
Smithfield Show and Agricultural Machinery Exhibition, Earl's Court, 478*, 510*, 540*
Smoke Emission by Steamers, Prevention, 505
Society of Motor Manufacturers and Traders. See *Motor*
— Technical and Scientific. See *Institutions*
— Trade. See *Labour ; Labour Notes ;* PARAGRAPH INDEX
Soil Mechanics, Influence of on Civil Engineering, 302, 419
— — and Road Foundations, 345
Solar. See *Sun*
Solder for Cable Joints, Researches on, 296
Sopwith, D. G., on Torsional Stress in Helical Springs, 63. See LETTERS, 15*, 40, 135
Sound Amplifying Equipment, Church House, 562
— Emitting Signals, Lister Beacon, Comparison of, 570
— and Light, Transmission in Atmosphere, Similarity Between, 118*, 477
— Signals in Finnish Seas, 570
— Wave Production by Hartmann Acoustic Generator, 99*, 136*
South African Electricity Supply Commission, Annual Report, 183
— — Railways, 2,700-h.p. 3,000-Volt Direct-Current Electric Locomotives, 233*
— East London Technical College, Courses in Electrical Engineering, 252
— Eastern Gas Board, M.S. "Wandsworth," 303* ; Coke-Oven Plant, East Greenwich Gasworks, 475, 499*
— Kensington, Science Museum, "Metals in Service of Mankind" Exhibition, 39 ; Centenary of Submarine Telegraphy Exhibition, 201. See *Erratum*, 333
— West, Notes from, 11, 35, 59, 83, 107, 131, 155, 179, 247, 327, 349, 377, 407, 439, 470, 503, 535, 565. See PARAGRAPH INDEX
— Western and Glasgow Railway, Centenary of, 418
— Yorkshire, Notes from, 11, 35, 59, 83, 107, 131, 155, 179, 247, 349, 377, 407, 439, 470, 503, 535, 565. See PARAGRAPH INDEX
Southampton Docks, Ocean Terminal Building, 6*, 111, 129* ; Telescopic Gangways for (Structural and Mechanical Development Engineers, Ltd.), 6*, 130
Southwell, Sir R., on Technological Education, 537
Specifications, Standard. See *Standards ; Standardisation*
Spectrographic Analysis, Standard Terms Used in, 10
Speed-Changing Gears. See *Gears ; Gearing ; Marine Propulsion*
— Reduction Gears. See *Gears ; Gearing ; Marine Propulsion*
— Regulation. See also *Governing*
— Trials. See *Trials*
"Speedmaster" Frequency Converters for Continuous Rolling Mill, Rogerstone, 282*
Spelling, Reform of, for Word "Engineer," 444
Spencer-Bonecourt, Ltd., Gas Turbine for Waste-Heat Recovery, 243
Spillway, Loch Sloy Hydro-Electric Scheme, 2*, 26*
— Tummel-Garry Hydro-Electric Scheme, 425*
— Wassen Hydro-Electric Scheme, 305*
Spirit, Motor. See *Motor Fuels*
Spoil Banks, Burning, Dangers from, 158
Sporn, P., on Power Transmission at Very High Voltages, 61
Sprayer, Acid, Agricultural, "Simplex" (Dorman Simplex Sprayer Co., Ltd.), 89*
Spraying Unit for Colwood Garden Tractor (Dashwood Engineering, Ltd.), 19*
Spreader, Lime, Agricultural, "Abbey" (Seamer Engineering Co., Ltd.), 89*
— Manure, Farmyard (Massey-Harris, Ltd.), 67*
Spring, Helical, Close-Coiled, Torsional Stress in, 15*. See LETTERS, 40, 63, 135
Sprinklers, Pipe Fittings for, Specification, 130
Sprite Take-Off Unit for Aircraft, 577*
Spur Gearing. See *Gears : Gearing ; Marine Propulsion*
St. Luc Railway Marshalling Yard, Montreal, 553*
Stabilising Gear, Denny-Brown, S.S. "Chusan," 489, 557*
Stability and Strength of Slender Beams, 333, 545*
Stabler, G. B., on Surface Finish of Marine-Engine Parts, 30
Stacpoole, R. W. de V., on Jet-Impingement Apparatus for Assessment of Corrosion by Sea Water, 291
Stairmand, C. J., on Pressure Drop in Cyclone Separators, 354. See LETTER, 63
Stanchions. See *Struts*
Standen, F. A., and Sons (Engineering), Ltd., "Peter Standen" Beet Harvester, 65*
Stanhay (Ashford), Ltd., Tool Bar for Tractor, 66* ; Hydraulic Hoist for Tractor, 66*
Standard Locomotives for British Railways, 326
— Specifications of Radio Industry Council for Radio Components, 59
— Institution, British, Packaging Code, Textile Bags, Sacks and Wrappings, 155 ; Standard Terms Used in Spectrographic Analysis, 10
— — British, Specifications, Steels for Land Boilers and Pressure Vessels, 10 ; Aluminium Electrodes for Metal-Arc Welding, 34 ; Mild-Steel Castings of High-Magnetic Permeability, 34 ; Ball Bearings and Parallel-Roller Bearings, 34 ; Wrought-Aluminium Tubes, Wire, Bars, Rods and Sections, 58 ; Vegetable Oils, 58 ; Engineering and Utility Services in Buildings, 82 ; Vernier Height Gauges, 82 ; Methods of Analysis for Oils and Fats, 106 ; Steel Butt-Welding Fittings for Petroleum Industry, 106 ; Valves and Gauges for Land-Boiler Installations, 106 ; Ball and Roller-Bearing Plummer Blocks, 106 ; Vernier Callipers, 106 ; Wrought-Iron and Mild-Steel Hooks, 130 ; Cast-Iron Pipe Fittings for Sprinklers, 130 ; Twist Drills and Combined Drills and Countersinks, 155 ; Industrial Safety Gloves, 216 ; Simple Bend Test, 222 ; Cycle Threads, 246 ; External Micrometers, 246 ; Tensile Testing of Metals, 246 ; Industrial Capacitators for Power-Frequency Systems, 246 ; Rubber Transmission Belting, 376 ; Thermal Insulating Materials, 376 ; Steel Filler Rod for Gas Welding, 405 ; Circular Screwing Dies and Hexagon Die Nuts, 405 ; Sampling and Examination of Bituminous Road Mixtures, 405 ; Boiler and Superheater Tubes, 405 ; Steam Turbo-Generators, 449* ; Pre-Cast Concrete Kerbs, Channels and Edgings, 470 ; Buttress Screw Threads, 470 ; Graphical Symbols for Generating Plant and Compressing Plant, 470 ; Automatic Control Valves for Petroleum, 502 ; Self-Holding Tapers, 502 ; Steel Balls for Brinell Hardness Testing, 534 ; Steel Tubes for Motor-Car Purposes, 534 ; and Industrial Perforated Plates, 534
— United States Bureau of. See *United States*
Standardisation on British Railways, 435, 484
— of Electric Lamps for Lighthouses, 400
— of Steam Turbo-Generating Plant, 449*
State Railways. See *Railways*
Station, Power. See *Power Stations*
— Railway, Liverpool Street, Pneumatic Buffer Stop, 130*
— — New Cross Gate, Colour-Light Signalling at, 436*
— — Platform Roofs, Design of, 542
Stationary Time Series, Extrapolation, Interpolation and Smoothing of (Review), 149
Statistics, Trade. See *Trade*
Stator for 7·5-MW Alternator, 522*
— for 22,667-kVA Alternator, 495*
— for 30,000-kVA Alternator, 313*
Steam Boats. See *Steamers*
— Boilers. See *Boilers*
— Engines. See *Engines*
— High-Pressure and Temperature, and Recommended Ratings for Turbines, 449*
— Superheater. See *Superheater*
— Turbines. See *Turbines*

Steamer "Chusan," Twin-Screw Passenger and Cargo, 489*, 526*, 557*
— under Construction, Lloyd's Statistics, 87, 330
— Electric Propulsion. See *Marine Propulsion*
— Geared Turbines for. See *Marine Propulsion*
— Launching of. See *Launching*
— Legislation Relating to, 550, 578
— Lost, Lloyd's Statistics, 263, 353, 539. See 100
— "Monarch of Bermuda," Fire Damage to, 152*
— "New Australia," Reconstruction of, 152*
— "Oronsay," Launch of, 15
— Propulsion of. See *Marine Propulsion; Engines; Turbines; Propellers*
— Smoke Emission by, Prevention of, 505
— "Titanic," Loss of, 551
— Water-Tight Subdivision of. See *Water-Tight*
— See also *Engines; Marine Propulsion; Shipbuilding; Shipping; Ships; Turbines; Warships;* PARAGRAPH INDEX
Steamships. See *Ships; Steamers; Warships*
Steckelmacher, W., on Vacuum Gauges, 96
Steel for Aeroplane Structures, 259*
— Castings, Continuous, Experiments in, 374
— — Mild, of High-Magnetic Permeability, Specification, 34
— Cold Working of, Effects of, 463
— Corrosion. See *Corrosion*
— at Elevated Temperatures, Creep Due to Fluctuating Temperatures in, 189*
— En, British Standard Isothermal Transformation Diagrams, 491
Steel Fabricators (Cardiff), Ltd., "Horndraulic" 15-cwt. Loader, 43*
— Foundry. See *Foundry*
— Furnaces. See *Furnaces*
— Heat-Resisting, for Gas Turbines, 214
— — Treatment of. See *Heat Treatment* under *Metallurgy*
— Industry, Automatic Control Systems for, 362
— and Iron, Deoxidation of, 414
— for Land Boilers and Pressure Vessels, Specification, 10
— Manufacture. See *Metallurgy*
— Plate Production, Metallurgical Trends in, 453
— — Pure Bending of, Experiments on, 52*, 76*
— Rails. See *Rails*
— for Railway Bridges, 465
— Rolling Mills. See *Rolling Mills*
— Ropes. See *Wire Ropes*
— Stainless, "Powder Cutting" of, 57*
— Stress Distribution in. See *Stress: Tests (Materials)*
— Structures, Application of Prestressing, 385
— for Tapered-Roller Bearings, 115. See *Erratum*, 186
— Tests of. See *Tests (Materials)*
— Tubes for Motor-Car Purposes, Specification, 534
— Welded Fittings for Petroleum Industry, Specification, 106
— for Wire Ropes in Mines, 515
— Works. See *Works*
Steering and Behaviour of Ships, 65, 69*, 74, 93*
— Gear, Electro-Hydraulic, S.S. "Chusan," 528*
Steffens, R. J., on Model Investigation of Ventilation System for House of Commons, 165*
Stephenson Clarke, Ltd., Motor Collier "Portsmouth," 32*
Stephenson, R., Britannia and Conway Tubular Bridges, 205
Stevenson, D. A., on Synchronised Fog Signals, 570
Stirling Boiler Co., Ltd., Boiler Plant for Stourport "B" Power Station, 286*
Stone, J., & Co., Ltd., "Stone-Kamewa" Reversible-Pitch Propeller, 303*
"Stone-Kamewa" Reversible-Pitch Propeller, 303*
Storage Battery. See *Accumulator* under *Electric*
Stothert & Pitt, Ltd., 2¼-h.p. Petrol-Driven Vibrating Road Roller, 446*
Stourport "B" Power Station, 286*. See LETTERS, 383, 508
Straightening Machine. See *Machine Tools*
Strains, Internal, in Cold-Drawn Steel, Investigation of, 463
— in Vehicle Wheels, Test Rig for Measuring, 8*
— See also *Stress*
Stranding Machine for Electric-Cable Manufacture, 375*
Street Works Public Utilities Bill, 87
— See also *Roads*
Strength of Materials. See *Stress* and *Tests (Materials)*
Stresses in Aeroplane Structures 257*, 302
— in Britannia and Conway Tubular Bridges, 205
— Corrosion of Aluminium Alloys, 341
— Fluctuating, at Elevated Temperatures, Creep Due to, 189*
— in Railway Bridges, 465, 509, 542, 571
— Residual Contact, in Built-Up Cylinders, 464*
— in Slender Beams, Investigations on, 333, 545*
— Strength of Materials (Review), 28
— Torsional, in Close-Coiled Helical Springs, 15*. See LETTERS, 40, 63, 135
— in Tubes, Due to Internal Pressure, 218*. See LETTERS, 383, 412, 476, 508
— in Wire Ropes in Mines, 515
Stressed Concrete Design, Ltd., Concrete-Prestressing Equipment, 151*
Strick, R., Models of Suspended Gravity Fenders, 5
Strikes. See *Labour Notes;* PARAGRAPH INDEX
Stringer, J., on Ingot Heat Conservation, 275
Strip, Aluminium, Continuous Rolling Mill for, Rogerstone, 265*, 281*, 337*
Structural and Bridge Engineering, International Association for, Papers of (Review), 459
Structural Design of Aeroplanes. See *Aeroplanes* under *Aeronautics*
— Engineers, Institution of, Prestressed-Steel Structures, by Prof. G. Magnel, 385
— Materials, Fire-Resisting, Investigations on, 441
Structural and Mechanical Development Engineers, Ltd., Telescopic Gangways for Southampton Docks, 6*, 130
Structures, Fire-Resisting, Electrical-Analogue Apparatus for, 5
— Indeterminate, J. Clerk Maxwell and Theory of, 194*. See LETTER, 252
— Maritime, and Winds and Waves (Review), 124
— Railroad, Modern (Review), 30
— Railway, Design of, 465, 509, 542, 571
— Reinforced-Concrete. See *Concrete, Reinforced*
— Steel, Application of Prestressing to, 385
— — Plates for, 453
— Theory of, Flexural Centre of Open Members, 321*
Strut with Crossed Pins, Euler Buckling Load of, 112. See LETTERS, 160*, 252, 354
Stuart Davis, Ltd., Tube-Straightening Machine, 57*
Stubbs, R. L., on Outlook for General Galvanising, 296
Students, Technical, Association for International Exchange of, Annual Report, 382
"Sturdy Star" Chassis for Motor Lorry, 285*, 342*
Sturgeon, W., Centenary of, 465
Subdivision of Ships. See *Water-Tight*
Submarine Telegraphs. See *Telegraphs*
Substation, Continuous Rolling Mill for Aluminium Strip, Rogerstone, 338
— for Large Chemical Factories, 573
— Loch Sloy Hydro-Electric Scheme, 98*
Sugar Cane Trailer (Whitlock Brothers, Ltd.), 44*
— History of, Vol. II (Review), 4
Sulphur in Basic Open-Hearth Process, 447
— Dioxide, Atmospheric Pollution by, 158
Sun as Emitter of Radio Waves, 443
Sunbeam Trolleybus Co., Ltd., MF2R Chassis for Trolley 'bus, 283*
Supercharging in Internal-Combustion Engines, 411, 433*, 481*
Superheater Tubes, Specification, 405
"Supermarine 535" Fighting Aeroplane, 238*
Supply, Ministry of, British Light Car for Services, 104*; 2,700-h.p. Electric Locomotives, 233*; 50-ton "Centurion" Tank, 325*; Standardisation of Steam Turbines, 449*; Air Compressor Using Water for Gas-Turbine Research, 485; Graphite Low-Energy Experimental Atomic Pile, 497*
Surface Condensers. See *Condensers*
— Finish of Marine-Engine Parts, 30, 55
— Flatness, Interferometer for Testing (Coventry Gauge & Tool Co., Ltd.), 243*. See LETTER, 412*
Surfacing of Roads, Investigation of, 345
Surge Shaft, Tummel-Garry Hydro-Electric Scheme, 461*, 493*
— Tank, Wassen Hydro-Electric Scheme, 307*, 313*
— Tower, Loch Sloy Hydro-Electric Scheme, 2*, 27*
Surveying, Geophysical (Review), 556
Sussex Shipbuilding Co., Ltd., 300-h.p. Aluminium-Alloy Motor Launch, 103*
Sweden, Coast Lights and Fog Signals in, 477
— Very High-Voltage Power Transmission in, 61
Swedish Lighthouses on Submarine Sites, 186, 513*
Swiss Federal Railways, Wassen Power Station for, 305*, 312*
Switchgear, S.S. "Chusan," 528
— Circuit Breakers, Air-Blast (Brown, Boveri & Co., Ltd.), 365*
— — Breakers, High-Voltage, Testing in France, 335*
— for Continuous Rolling Mill, Rogerstone, 265*
— for 2,700-h.p. 3,000-Volt Direct-Current Locomotives, 235*
— for Large Chemical Factories, 573
— Present-Day Practice in, 226
— Stourport "B" Power Station, 287
— Tummel-Garry Hydro-Electric Scheme, 497*, 523*
Switching Station, Inveruglas, Loch Sloy Hydro-Electric Scheme, 98*
— — Wassen Hydro-Electric Scheme, 315*
Switzerland, River Reuss, Wassen Power Station on, 305*, 313*
Symbols, Graphical, for Generating Plant and Compressing Plant, Specification, 470
Symposium and Exhibition, Electronics, Programme, 135
Synchrotron at Birmingham University, 96
Szechy, K., Budapest Underground Railway, 517

T.

TABLES of Binomial Probability Distribution (Review), 236
— of Function $\sin \phi/\phi$ (Review), 340
Take-Off Units, Walter & Sprite, for Aircraft, 575*
Tamkin Brothers & Co., Ltd., Tractor-Mounted Concrete Mixer, 445*
Tank Experiments by British Shipbuilding Research Association, 17, 48
— — Dumbarton, Tests of Drifters, 29
— — Hull Design for Laminar Flow, 75
— — Ships in Rough Water, 93*
— Fuel, Hydrogen-Peroxide, for Aircraft Starting Motors (Avro (Canada), Ltd.), 72
— Military, 50-ton "Centurian," Production of, 325*
— — Developments in, 474. See LETTER, 569
— Ships, Motor. See *Oil Tankers*
— Steamers. See *Oil Tankers*
Tannoy Products, Ltd., Sound-Amplifying Equipment at Church House, 562
Tapers, Self-Holding, Specification, 502
Tapping, Production of Accurate Screw Threads, 507
Tapsell, H. J., on Creep Due to Fluctuating Stresses at Elevated Temperatures, 189*
Tar and Chippings on Roads, Adhesion Between 421
— Industry, German, During 1939-45, 182
Taskers of Andover (1932), Ltd., Power-Driven Hoist, 42*; Smart's Aerator and Turner, 42*; Hydraulic Tipping Trailer, 42*
Tata Hydro-Electric Power Supply Co., Ltd., 20-mVA Transformers, 270*
"Tay Viscount" Research Aircraft, 268*
Taylor, Dr. J. L., on Hull Design for Laminar Flow, 75
Teaching. See *Education*
Technical College and Education. See *Education*
— Information, Various Methods for Presentation of, 213, 228, 237, 260*, 279
— Societies. See *Institutions* and PARAGRAPH INDEX
— Students, Association for International Exchange of, Annual Report, 382
Technicians, Electrical, Report on Educational Training Schemes for, 443
Technological Education, Higher, Future Development of, Report on, 381, 537
Teed, Major P. L., on Aircraft Metals at Low Temperatures, 357
Teeth, Gear. See *Gear*
Telecommunication Interference from High-Voltage Systems, 103
— Recent Developments in, 352
Telegraphy, Submarine, Centenary of, 102. See *Erratum*, 333
— Wireless. See *Valves, Thermionic; Radar; Radio; Television*
— See also *Electricity* in PARAGRAPH INDEX.
Telephonic Interference from High-Voltage Systems, 103
Telephony, Recent Developments in, 352
— Steels and Non-Ferrous Alloys Used for Equipment, 296
— Wireless. See *Valves, Thermionic; Radar; Radio; Television*
— See also *Electricity* in PARAGRAPH INDEX
Telescope, Astronomical, Automatic Control Systems for, 362*
Telescopic Gangways for Southampton Docks (Structural and Mechanical Development Engineers, Ltd.), 6*, 130
Television Broadcast, Cross-Channel, 202
— Interference from High-Voltage Systems, 103
— Research by British Broadcasting Corporation, 81
Tellier, R., on High-Voltage Cable Developments in France, 319*
Temperature Distribution in Ingot Moulds, 275
— High, Uses in Chemistry (Review), 459
Tempiewood Engineering Co., Ltd., Mark I Grass Drier, 89*
Tennant, C., Sons & Co., Ltd., Portable Indentation Hardness Tester, 437*
Tensile Tests. See *Tests (Materials)*
Tensor Club of Great Britain, Formation of, 7
Ternary Alloys. See *Alloys* under *Metallurgy*
Terminal, Marine, for Fawley Oil Refinery, 563
Tests, Aeronautical. See *Aeronautics*
— Corrosion. See *Corrosion*
— of Extra High-Voltage Cables at Fontenay, 319*
— of Jet-Propelled Hull-Resistance Research Ship "Lucy Ashton," 17, 54, 161*, 573*

Tests (Materials):

Bend Test, Simple, Notes on, 222
Creep Tests of Heat-Resisting Materials Under Fluctuating Stresses, 189*
— — on Lead Pressure-Cable Sheaths, 121*
Crushing Tests of "No-Fines" Concrete, 398*
Disc Deformation Tests on Lead Pressure-Cable Sheaths, 121*
Hardness, Diamond Indentation, Testing Machine (Cabul Tool Co., Ltd.), 437*
— Tests, Brinell, Steel Balls for, Specification, 534
Impact Test, Izod & Charpy, for Ship Plates, 453
Mechanical Tests of a Century Ago on Cast-Iron Bars, 207
— — of Aluminium-Alloy Riveting, 467
Notched-Bar Impact Tests. See *Impact Tests* (above)
Shear-Strength Tests of Cold-Riveted Aluminium Rivets, 142*
Stresses in Materials and Structures. See *Stress*
Tensile Tests of Steel Plates, 453
— Testing of Metals, Specification, 246
Tests of Lead and Lead-Alloy Pressure-Cable Sheaths, 121*
Testing Apparatus, Creep-Fatigue, for Lead Pressure-Cable Sheaths, 121*
— Machine, 24,000-lb., British Electricity Authority, 81*
— — Hardness, Portable Indentation (Cabul Tool Co., Ltd.), 437*
Tests, Model, of Britannia Tubular Bridge, 205
— Rig for Measuring Strains in Motor-Vehicle Wheels, 8*
Testing of Air-Blast Circuit Breakers (Brown, Boveri & Co., Ltd.), 365*
— Apparatus, Creep-Fatigue, for Lead Pressure-Cable Sheaths, 121*
— Equipment, College of Aeronautics, Cranfield, 126*
— Frame for Aircraft Structures, Fairey Aviation Co., Ltd., 430*
— Machine, 24,000-lb., British Electricity Authority, 81*
— — Hardness, Portable Indentation (Cabul Tool Co., Ltd.), 437*
— — for Full-Size Specimens of Ships' Structures, 54
— — for Slender Beams, 333, 545*
— — See also *Tests (Materials)*
— Measuring Gauges, Interferometer for (Coventry Gauge & Tool Co., Ltd.), 243*. See LETTER, 412*
— by National Bureau of Standards, Scope, 102
— Plant, Pulsating-Pressure, for Pressure Vessels (Werner & Pfleiderer), 384*
— of Railway Bridges, 542
— Set, Valve-Impedance (Mullard Electronic Products, Ltd.), 56*
Testing, Vibration-, Equipment, for Aeronautical Research (de Havilland Propellers, Ltd.), 203*
— of Wire Ropes in Mines, 516
— See also *Tests (Materials); Trials*
Text-Books. See LITERATURE INDEX
Textile Bags, Sacks and Wrappings, Standard Packaging Code, 155
Thermal Efficiency of Power Stations, 53, 79
— — of Steam Turbo-Generating Plant, 449
— Insulating Materials, Specification, 376
— Treatment, Metals. See *Heat Treatment* under *Metallurgy*
Thermionic Valves. See *Valves, Thermionic; Radio*
Thermodynamic Background of Steel-Making Process, 414
Thermodynamics of Gas Turbines, 214*
— General, Modern, Introduction to and Application to Chemistry and Physics (Review), 368
Thomas, T. F., on Heat Pumps at Stourport "B" Power Station, 383. See 287. See LETTER, 508
Thompson, Prof. F. C., on Isothermal Transformation of Austenite, 492
Thomson, Prof. A. S. T., on Surface Finish of Marine-Engine Parts, 30
Thorley, Dr. K., on Activation Energy of Recovery in Copper, 373
Thornycroft, J. I., & Co., Ltd., Reconstruction of S.S. "New Australia," 152*; Launch of M.S. "Blenheim," 187*
Threads, Screw. See *Screw*
Thrust-Measuring "Capsule" for Jet Engines, 573*
Thwaites Agricultural Engineering Co., Ltd., Forage Harvester, 67*
Tile-Drainage Machine (J. A. Cuthbertson, Ltd.), 20*
Tiltman Langley Laboratories, Ltd., Portable Grass Drier, 72; Glandless Flow-Control Valves, 221*; Gerritsen Infinitely-Variable Gear, 530*
Timber Investigation by Forest Products Research Board, 110
Time Series, Stationary, Extrapolation, Interpolation and Smoothing of (Review), 149
— Studies, Survey of Advances in, 251
Tinsley (Industrial Instruments), Ltd., Pressure Meter for Open-Hearth Furnace, 374
Tipping Wagons, Motor. See *Motor Vehicles*
"Titanic," S.S., Loss of, 551
Titanium for Communications Apparatus, Rolled Foil for, 296
Tolerances in Machine Work. See *Gauges*
Tools, Machine. See *Machine Tools*
— Pneumatic. See *Machine Tools*
Toolbars for Agricultural Tractors, 66*, 262, 388*
Toothed Gear. See *Gear; Gearing; Marine Propulsion*
"Torquil" Gas-Turbine Motor Launch, 308*
Tourry, Prof. G., on Reconstruction of Berck Light Tower, 186
Tower, Atmospheric, Fawley Oil Refinery, 563*
— Control, for St. Luc Railway Marshalling Yard, 554*
— Cooling, Precipitation of "Drizzle" from, 158
— Light, Berck, France, Reconstruction in Prestressed Concrete, 186
— Power Transmission, Machinery for Erection of, 261*
— Vacuum, Fawley Oil Refinery, 563*
Town Gas. See *Gas*
Trackless Trolley System, Road Traction. See *Trolley 'Bus*
Traction, Electric. See *Railways; Trolley 'Bus*
Tractor, Agricultural, "Cropmaster," with "Horn-draulic" Loader (D. Brown Tractors, Ltd.), 43*
— — "Cropmaster," with One-Way Plough (D. Brown Tractors, Ltd.), 43*
— — Developments in, 262, 317, 388*. See 356
— — 50-h.p. Diesel, Track-Laying (H. L. Arnes & Co. (Engineering), Ltd.), 68*
— — Hydraulic Hoist for (Stanhay (Ashford), Ltd.), 66*
— — Loader for (J. C. Bamford), 67*
— — 35-h.p. Petrol-Engined (Renault, Ltd.), 541*
— — 8/10-h.p. "President" (Brookhouse Engineering (Southport), Ltd.), 41*
— — Tool Bar Fitting (Stanhay (Ashford), Ltd.), 66*
— — Track-Laying (Fraser Tractors, Ltd.), 67*
— Concreting and Back-Filling, 10-h.p. Petrol or Diesel-Driven (Tutz Tractors, Ltd.), 520*
— Crawler, 80-b.h.p. "Challenger Mark II" (J. Fowler & Co. (Leeds), Ltd.), 17*
— — 40-h.p. Diesel-Engined "Dragon" (V. Loyd & Co., Ltd.), 540*
— — 45-b.h.p. Diesel-Engined Fiat Model "52" (Mackay Industrial Equipment, Ltd.), 540*
— — 18-h.p. John Deere (J. Olding & Co., Ltd.), 43*
— — "Mark VF," with Bray Hydraulic Angledozer (J. Fowler & Co. (Leeds), Ltd.), 18*
— — 22-b.h.p. Petrol-Driven Fiat Model "601" (Mackay Industrial Equipment, Ltd.), 540*
— Ferguson, 32-b.h.p. Three-Cylinder Diesel Engine for (F. Perkins, Ltd.), 479*
— Garden, Colwood, 1·2-h.p. Petrol-Driven (Dashwood Engineering, Ltd.), 19*
— 130-b.h.p., Six-Wheel Drive, "Explorer" (Scammell Lorries, Ltd.), 284*
— Roller, Three-Wheeled Petrol-Driven (H. R. Nash, Ltd.), 541*
— Track-Laying, 50-h.p., Diesel (H. L. Arnes & Co. (Engineering), Ltd.), 68*
— — Laying (Fraser Tractors, Ltd.), 67*
— — Laying, 180-b.h.p. Diesel-Engined (Vickers-Armstrongs Ltd.), 371*
— — Laying, Models "ADN 130" and "ADN 70" (Acieries du Nord), 444*
Tractor Shafts Co., Ltd., "Smallford" Potato Planter, 20*
Trade Disputes. See *Labour* and *Trade Societies* in PARAGRAPH INDEX
— Exhibition. See *Exhibition*
— Export, of Capital Goods to North America, Guidance on, 157
— — Coal, National Coal Board Report, 13

Trade Unions. See *Labour* and *Trade Societies* in PARAGRAPH INDEX
— United Kingdom and Pakistan, 330
Traffic Arteries, Road, International, Proposed, 434
Trailer Coach, "Dyson-Express," for Passenger Transport, 162*
— 70-ton Heavy-Duty (R. A. Dyson & Co., Ltd.), 283*
— 100-ton Heavy-Duty (R. A. Dyson & Co., Ltd.), 457*
— Sugar Cane (Whitlock Brothers, Ltd.), 44*
— Tipping, "Midget" (Markham Traction, Ltd.), 68*
— — Hydraulic (Taskers of Andover (1932), Ltd.), 42*
— — Three-Way (Whitlock Brothers, Ltd.), 43*
Train. See *Railway*
Training. See *Education*
Trälleborg Lighthouse, Sweden, 186, 513*
Transfer, Heat, Vol. I (Review), 172
Transformation Diagrams, Isothermal, of En Steels, Atlas of, 491
— in Iron-Nickel Alloys, 492
— Isothermal, of Austenite, 492
Transformers, 20-MVA, for India (Hackbridge & Hewittic Electric Co., Ltd.), 279*
— Instrument, Defects of, Effect of Core Properties On, 184*
— for Large Chemical Factories, 573
— 11/132-kV, Loch Sloy Hydro-Electric Scheme, 98*
— Small Power, and Chokes, for Radio Equipment, 401
— Stourport "B" Power Station, 287
— Tummel-Garry Hydro-Electric Scheme, 496*, 523*
— Wassen Hydro-Electric Scheme, 314*
Transmission Belting, Rubber, Specification, 376
— Electric, Ship Propulsion. See *Marine Propulsion*
— Gear. See *Gear; Gearing; Marine Propulsion*
— of Power. See *Marine Propulsion; Power Transmission*
Transplanters (Robot), Ltd., Post-Hole Digger, 541*
Transport, Aerial. See *Aeronautics*
Transport Equipment (Thornycroft), Ltd., "Sturdy Star" Chassis for Motor Lorry, 285*, 342*
— Freight, by Road, Rail and Inland Waterway, Integration of, Statement on, 133. See LETTER 183. See 424
— Ministry of, Requirements and Recommendations for Railway Construction and Operation (Review), 50; British Transport Commission's Annual Report, 273; and Shipping Legislation, 550, 578
— Motor. See *Road; Motor*
— Problems in Pakistan, 330
— Railway. See *Railway*
— Road. See *Road; Motor; Trolley 'Bus*
Transporter, Mono-Rail (Road Machines (Drayton), Ltd.), 445*
— for Pipe Line, Loch Sloy Hydro-Electric Scheme, 49*
Transverse Bulkheads. See *Water-Tight Subdivision*
Travel Grants, Educational, to United States, 443
Tremain, G. R., on Creep Due to Fluctuating Stresses at Elevated Temperatures, 189*
Trenching Machine for Transmission-Line Construction, 261*
Trials, Agricultural Tractors. See *Tractors*
— and Launches of Ships, 10, 44, 72, 87, 116, 140, 164, 207, 264, 304, 316, 327, 357, 392, 456, 480, 544, 580
— See also *Tests*
Trinity College, Cambridge, Investigations on Pure Bending of Rectangular Plates, 51*, 76*
Trolley 'Bus, 40-Seater, MF2R Chassis for (Sunbeam Trolleybus Co., Ltd.), 283*
Trollope & Colls, Ltd., Foundations for House of Commons, 393*
Trucks, Railway. See *Wagons*
— See also *Bogie*
Tube, Boiler, Investigation on Corrosion of, 7*
— Condenser, Investigations on Corrosion in, 291
— Deforming Machines for "Holoplast" Plastic Panels, 176*
— for Gas-Flow Experiments, 277*, 333
— under Internal Pressure, Stresses in, 218*. See LETTERS, 383, 412, 476, 508
— Railways. See *Underground Railways; London Transport Executive*
— Steel, Boiler and Superheater, Specification, 405
— — for Motor-Car Purposes, Specification, 584
— Wrought Aluminium, Specifications, 58
— See also *Pipes*
Tubular Bridge, Britannia, Construction of, 205
— — Conway, Construction of, 205
Tudor V Aircraft, Accident to, 463
Tummel-Garry Hydro-Electric Scheme, 425*, 460*, 493*, 521*
Tungsten Lamps. See *Lamps* under *Electric*
Tunnels for Budapest Underground Railway, 517
— Loch Fannich, Completion of, 242*
— — Sloy Hydro-Electric Scheme, 1*, 26*, 330
— Railway, Construction of, 542
— Tummel-Garry Hydro-Electric Scheme, 425*, 460*
— for Wassen Hydro-Electric Scheme, 305*, 313*
Tupin, Dr. W. A., on Machine Tools for Small Gears, 252. See 145*, 169*. See LETTERS 291, 331, 354, 382
Turbine, Gas, Air Compressor Using Water, for Research, 485
— — for Aircraft, 230*, 270, 293*
— — Alloys for, Conference on, Programme, 221; Postponement of Conference, 242
— — Blading. See *Blading*
— — Constant-Pressure (Review), 429
— — Determination of Vibration of Blades in, 323*. See LETTERS, 444, 476, 539
Turbine, Gas, Development for Locomotives in United States, 38
— — for Industrial Purposes, 214*. See 270
— — 1,070-h.p. Ruston and Hornsby, Ltd., Development of, 538*. See ADDENDUM, 569
— — for Waste-Heat Recovery (J. Brown & Co., Ltd.), 243
— — See also *Engines* under *Aeronautics*
— Hydraulic, 28,700-h.p. Francis, Clunie Power Plant, 493*
— — 32·5 MW Francis, Loch Sloy Hydro-Electric Scheme, 2, 97*, 330
— — 36,600-h.p. Francis, Wassen Hydro-Electric Scheme, 305*, 313*
— — 10,900-h.p. Kaplan, Pitlochry Power Plant, 521*
— — See also *Power Plant*
— Steam, Marine, Geared. See *Marine Propulsion*
— — 1,250-kW Mixed-Pressure (General Electric Co., Ltd.), 243*
— — 1,390-kW Pass-Out (W. H. Allen, Sons & Co., Ltd.), 346*
— — 4,000-kW Pass-Out for Paper Mill (Hick, Hargreaves & Co., Ltd.), 209*
— — for Power Stations, 79
— — for Power Stations, Standardisation of, 449*
— — 60-MW, Stourport "B" Power Station, 287*
— — See also *Turbo-Generators*
— Steamers. See *Steamers; Warships*
Turbo-Electric System, Ship Propulsion. See *Marine Propulsion*
— Exhausters, East Greenwich Gasworks (Bryan Donkin Co., Ltd.), 501
— Generator, 850-kW, S.S. "Chusan," 527*
— — 60-MW Hydrogen-Cooled, Stourport "B" Power Station, 287*
— — 1,250-kW Mixed-Pressure (General Electric Co., Ltd.), 243*
— — for Power Stations, 79
— — for Power Stations, Standardisation of, 449*
Turenne, Barbier and Benard on Incandescent Burner ("Any Gas") for Beacon Installations, 400; on Aerial Beacons in Marine Lights, 477; on Safety in Coast Lighting, 477
Turner and Aerator, Agricultural, Smart's (Taskers of Andover (1932), Ltd.), 42*
Turning. See *Machine Tools*
Turrets, Rotating, for Telescopic Gangways, Southampton Docks, 6*
Turton Platts, G., & Co., Ltd., Pneumatic Buffer Stop, 139*
Tustin, Prof. A., on Progress in Automatic Control Systems, 360*. See 237
Tutz Tractors, Ltd., 10-h.p. Concreting and Back-Filling Tractor, 520*
Tyne Dock, Iron-Ore-Discharging Plant, 159
— Improvement Commission, Ore-Discharging Plant, Tyne Dock, 159

U.

UGANDA, Owen Falls Hydro-Electric Scheme, Model of, 28
Underground Railway, Budapest, 517
— — Central London, Jubilee of, 91*
— — Paris, Jubilee of, 15
— — Sixtieth Anniversary of Opening of City and South London Line, 556
— — See also *London Transport Executive*
Union, Trade. See *Labour* and *Trade Societies* in PARAGRAPH INDEX
United Kingdom Industrial Mission to Pakistan, Report, 330
— Nations Economic Commission for Europe, Problems of Electricity Supply in Europe, 353; Proposed International Road-Traffic Arteries, 434
— States Bureau of Mines, Report on Safety in Mining Industry, 301
— — Bureau of Standards, Tables of Binomial Probability Distribution (Review), 236
— — Coast Guard, Radio-Telephone Calling Devices for, 570
— — Diesel-Locomotive Industry, 479, 567
— — Educational Commission, Travel Grants by, 443
— — Use of Electric Batteries for Navigation Lights, 274
— — Electricity Supply and Industrial Production in, 409
— — Export of Capital Goods to, Guidance on, 157
— — Internal-Combustion Engine Productivity Team's Visit to, 62
— — Locomotive Construction in, Report, 38
— — National Bureau of Standards, Scope of Testing by, 102
— — Railways. See *Railroads*
— — Roads, Problems of, 345, 387
— — Shipbuilding Research in, 17
— — Structures, Fixed, to Replace Lightships, 138
— — Unattended Lightships in, 274
— — Visit of Pressed-Metal Industry's Productivity Team, Report on, 86. See LETTER, 112
— — Waterbury, Continuous Brass Rolling Mill at, 398
— — See also *America*
University, Birmingham, Synchrotron at, 96; Advanced Courses in Metallurgy and Mechanical and Chemical Engineering, 124
— Bristol, Investigations on Stability of Slender Beams, 333, 545*
— Cambridge, Summer School on Electrical-Resistance Strain-Gauge Methods, 130
— Courses in Metallurgy, New Recommendations, 353
— and Higher Technological Training, 419
— Nottingham, Refresher Courses for Works and Plant Engineers, 139
— See also *Education*
Uskmouth Power Station, Caisson Sinking, 88
Utah Construction Co., Goulburn River Dam, Australia, 382
Utgrunden Lighthouse, Sweden, 514*; Radio Control at, 571
Utility and Engineering Services for Buildings, Specification, 82

V.

VACUUM Physics Conference and Exhibition, 96
— Pump. See *Pump*
— Tower, Fawley Oil Refinery, 563*
— Tube. See *X-Rays; Valves, Thermionic*
Valve, Control, Automatic, for Petroleum, Specification, 502
— Flow, Control, Glandless (Tiltman Langley Laboratories, Ltd.), 221*
— — of Gas in, Experiments on, 277*, 333
— and Gates, Tummel-Garry Hydro-Electric Scheme, 426*, 493*, 521*
— for Heavy-Duty Oil Engines, 31
— for Land-Boiler Installations, Specification, 106
— Thermionic, Impedance-Testing Set for (Mullard Electronic Products, Ltd.), 56*
— and Valve Gear. See also *Engines*
Van Troys, L., on Apparatus for Study of Sea-Wave Motion, 160
Variable-Speed Gear. See *Gear*
Vauxhall Motors, Ltd., 7-ton Bedford Motor-Tipper, 255*; Extensions to Luton Factory, 518*
Vedeler, Prof. G., on Brittle Fracture in Ship Plates, 290*
Vegetable Oils, Specification, 58
Velocity Gyroscope, S.S. "Chusan," 560*
Venesta, Ltd., Silvertown Factory, Model of, 28
"Venom" Night-Fighting Aeroplane, 239*
Ventilation of Ships, Investigations, 55
— System for House of Commons Debating Chamber, 165*, 393*
— — S.S. "New Australia," 154
Vernier Callipers, Specification, 106
— Height Gauges, Specification, 82
Vernon, M. D., on Psychologist's View of Presentation of Technical Information, 213, 237
Vessel, Pressure, Pulsating-Pressure Testing Plant for (Werner and Pfleiderer), 384*
— — Steel for, Specification, 10
Viaducts, Railway, Design of, 509
— See also *Bridges*
Vibration of Gas-Turbine Blades, Determination of Natural Modes of, 323*. See LETTER, 444, 476, 539
— in Ships, Investigations on, 17, 48, 94
— Testing Equipment for Aeronautical Research (de Havilland Propellers, Ltd.), 203*
Vickers-Armstrongs Ltd., Launch of S.S. "Oronsay," 15; "Supermarine 535" Fighting Aeroplane, 238*; "Tay Viscount" Research Aircraft, 268*; "Viscount 700" Air Liner, 268*; 50-ton "Centurion" Tank, 325*; 180-b.h.p. Diesel-Engined Track-Laying Tractor, 371*; S.S. "Chusan," 489*, 526*, 557*; Oil Tanker, "British Adventurer," Launch of, 507
Victor Products (Wallsend), Ltd., Electric Hammer Drill, 445*
"Viking" Air Liner, Explosion in, Report, 341
"Viscount 700" Air Liner, 268*
Visibility and Luminous Range in Lighthouses, 570
Voltage Regulators, Automatic, 362*
von Karman, Dr. T., Award of Kelvin Gold Medal to, 381
Voysey, R. G., on Vibration of Gas-Turbine Blades, 476. See 323*. See LETTER, 444, 539

W.

WAGES. See *Labour*; PARAGRAPH INDEX
Wagons, Motor. See *Motor Vehicles; Tractors*
— Standardisation on British Railways, 435, 484
Wakefield, C. C., & Co., Ltd., Mechanical Grease Lubricator, 316*
Wall, Retaining, on Railways, Design of, 542
Wallace, A. J. L., on Machine Tools for Small Gears, 252. See 145*, 169*. See LETTERS, 291, 331, 354, 382
Walter Take-Off Units for Aircraft, 575*
"Wandsworth," M.S., "Stone-Kamewa" Reversible-Pitch Propeller, 303*
Wans, I., on Trends in Oil-Engine Design, 31
"Wanstead," M.S., Design of, 30, 64
War Office, 50-ton "Centurion" Tank, 325*; Use of Akroyd Oil Engines by, 415, 450
— Time, German Coal-Tar and Benzole Industries in, Report on, 182
— — Work of Fuel Research Board, 505
Warfare, Effect on Tank Design, 474. See LETTER, 569
— Naval. See *Warships*
— Use of Aircraft in. See *Aeronautics*

Warships:

Aviation, Naval. See *Aeronautics*
Guns, Naval. See *Guns*
H.M. Ships, Corrosion in Sea-Water Pipe Systems of, 291
— — Experiences with Turbine Gearing in, 539
Naval Aeronautics. See *Aeronautics*
— Guns. See *Guns*
See also *Naval* in PARAGRAPH INDEX
Wassen Power Station on River Reuss, Switzerland, 305*, 313*
Waste-Heat Recovery, Gas Turbine for (J. Brown & Co., Ltd.), 243
Water Heaters. See *Feed-Water Heaters*
— Pollution Research Board, Report for 1949, 506
— Power. See *Hydraulic: Power Plant: Power, Water; Turbine, Hydraulic*
— Resources in Deserts, Search for, 560
— Supply Practice, British, Manual of (Review), 368
— Tanks. See *Tanks*
Water-Tight Subdivision, Effect on Safety at Sea, 578
— Tube Boiler. See *Boiler*
— Turbines. See *Turbines, Hydraulic; Power Plant*
— Wheels. See *Turbines, Hydraulic: Power Plant*
Waterbury, United States, Continuous Brass Rolling Mill at, 398
Waterways, Inland, Roads, and Railways, Integration of Freight Services by, 424
— See also *Rivers: Canals*
Waterworks. See *Water Supply* and PARAGRAPH INDEX
Watford Electric and Manufacturing Co. Ltd., Control Panels, Continuous Rolling Mill, Rogerstone, 338
Watt, James, "Lap" Steam Engine, Model of, 199*
Watts, E. H., on New Cargo Liner Design, 30, 64
Waves, Earth (Review), 397
— Motion of Sea, Apparatus for Study of, 160
— Radio, Sun as Emitter of, 443
— Sound, Production of Hartmann Acoustic Generator, 99*, 136*
— Winds and Maritime Structures (Review), 124
Weather. See *Meteorology*
Weeder, Universal (Aldersley Engineering Co., Ltd.), 43*
Weir, Concrete, for Wassen Hydro-Electric Scheme, 305*
Weir, G. & J., Ltd., Oil Separator for Boiler Feed-Water, 117*; Feed Pumps for Stourport "B" Power Station, 287
Welded Construction, Work of British Shipbuilding Research Association, 17, 54
— Joints, Stress-Relieving and Pre-Heating of (Quasi-Arc Co., Ltd.), 392
Welding, Gas, Steel Filler Rods for, Specification, 405
— Machine, Direct-Current, with Rectifier Control (Hackbridge & Hewittic Electric Co., Ltd.), 205*
— Metal-Arc, Aluminium Electrodes for, Specification, 34
— Pressure, of Copper-Base Alloys, 399
— Research Association, British, Annual Report, 87; Pulsating-Pressure Testing Plant for Pressure Vessels, 384*
Wellman, Smith Owen Engineering Corporation, Ltd., Coiler for Aluminium Strip, Rogerstone, 282*
"Wendover," M.S., Design of, 30, 64
Werner and Pfleiderer, Pulsating-Pressure Testing Plant for Pressure Vessels, 384*
West's Gas Improvement Co., Ltd., Gas Turbine for Waste-Heat Recovery, 243
— of Scotland Iron and Steel Institute. See *Iron and Steel*
West, W. J., on Achievements in Farm Mechanisation, 386*. See 356
Westinghouse Brake and Signal Co., Ltd., Colour-Light Signalling Equipment for British Railways, 436*
Westminster Abbey, Memorial to Sir Charles Parsons, 317, 359; Memorials to Engineers in, 382
— Church House, Sound-Amplifying Equipment, 562
Westwood, J., & Co., Ltd., Railway Bridge Over Grand Surrey Canal, 487*
Westwood, J. R., on Machine Tools for Small Gears, 354. See 145*, 169*. See LETTERS, 252, 291, 331, 382
Wheels, Gear. See *Gears; Gearing; Marine Propulsion*
— Motor-Vehicle, Test Rig for Measuring Strains in, 8*
Whessoe, Ltd., Wet Purification Plant for Coke-Oven Gas, Greenwich Gasworks, 499*
Whipp & Bourne, Ltd., Switchboard, S.S. "Chusan," 528*
Whitlock Brothers, Ltd., Three-Way Tipping Trailer, 43*; Sugar Cane Trailer, 44*
Wiegandt, M. H., on Machine Tools for Small Gears, 354. See 145*, 169*. See LETTERS, 252, 291, 331, 382
Wild, Dr. R., on Reduction of Lump Iron Ores, 253
Wilkins, R. J., on Flexural Centre of Open Members, 321*
Williamson, J., & Partners, Loch Sloy Hydro-Electric Scheme, 1*, 25*, 49*, 97*, 330
Willott, W. H., on Transmission of Sound and Light in Atmosphere, 118*, 477
Wilmshurst, T. P., the Late, 355
Wilson, D. V., on Effect of Cold Work on Steel, 463
Wilson, L., on Future Policy of Aslib, 302
Wimpey, G., & Co., Ltd., Dam for Tummel-Garry Hydro-Electric Scheme, 425*, 521*
Wind Effect on Steering of Ships, 65, 69*, 74, 93*
— Power for Electricity Supply, Conference on, 381
— Pressure on Suspension Bridges, 237
— Tunnels. See *Aeronautics*
— Waves and Maritime Structures (Review), 124
Winding Operations in Mines, Wire Ropes for, 515
Windmill, Electricity-Generating, for Orkneys, Model of, 5
Window Frames, Galvanised, Corrosion Resistance of, 276
Winget, Ltd., "Winget-Lolode" 3-ton Plant Transporter, 401* 2-4-h.p. Petrol-Driven Barrow, 402*
Wire Ropes in Mines, Conference on, 515
— Wrought Aluminium, Specification, 58
Wireless Telegraphy. See *Radio*
— Telephony. See *Radio*
Withers, G., on Sulphur in Basic Open-Hearth Process, 447
Wood for Aeroplane Structures, 259*
Wood, Dr. W. A., on Atomic Displacements in Plastically-Deformed Metals, 372; on Mechanism of Primary Creep in Metals, 372
"Woodford," M.S., Design of, 30, 64
Woollard, F. G., on Flow-Line Production, 334, 451. See 309, 351
Woollatt, J. S., on Methods of Study of Internal-Combustion Engines, 40

Works :
Birtley Factory of W. T. Henley's Telegraph Works Co., Ltd., 375*
Cambridge Instrument Co., Ltd., Cambridge Works, 41
Chemical Factories, Electrical Installations in, 573
Continuous Rolling Mill for Aluminium Strip, Rogerstone, 265*, 281*, 337*
Gasworks. See *Gasworks*
Luton Factory Extensions, Vauxhall Motors, Ltd., 518*
Marine-Engine Shop, Cammell Laird & Co., Ltd., Lighting Installation in, 192
Pye, Ltd., Cambridge Factory, 40
Steelworks, 300-b.h.p. Diesel-Engined Locomotive for (Hunslet Engine Co., Ltd.), 467*
Works Management, Production Engineering, 309, 334, 351, 421, 486, 561
— — Refresher Courses for Foremen, 357
— — Work Measurement Research, 309, 310*, 351, 561
— — Work Measurement, Survey of, 251
— — Workshop Technology, Modern, Part II, Machine Tools and Metrology (Review), 236. See *Addendum*, 340
— Measurement Research, 309, 310*, 351, 561
— — Survey of, 251
— Ministry of, Model Investigation of Ventilation System for House of Commons, 165* ; Annual Report, 1949, 181 ; Engineering Features of House of Commons, 393* ; Codes of Practice. See *Standards*
— and Plant Engineers, Refresher Courses at Nottingham University, 139
Workmen. See *Labour*
Workshop Technology, Modern, Part II, Machine Tools and Metrology (Review), 236. See *Addenda*, 340
— Training. See *Education*
— See also *Works ; Machine Tools*
World Power Conference :
Report of Proceedings, 37
Modern Trends in Oil Engine Designs, by I. Wans, 31
Development of Power from Nuclear Energy, by Prof. Sir J. Cockcroft, 225
Nuclear Energy for Power Production, by W. F. Davidson, 225
Worm Gear. See *Gear ; Gearing*
Wrappings, Textile, Packaging Code, 155
Wrecks. See *Accidents*
Wright, Col. Sir W. C., the Late, 159
Wrought Iron. See *Iron*

X.

X-RAY Equipment, 300-kV (Newton Victor Ltd.), 245*
— — Investigations on Cold-Drawn Steel, 463
— — Observations of Creep and Deformation in Metals, 372
Xylonite Plate, Pure Bending of, Experiments on, 77*

Y.

"YB1" Anti-Submarine Aircraft, 269*
Year Books. See LITERATURE INDEX

Z.

ZINC Alloys. See *Alloys* under *Metallurgy*
— Under Constant Stress, Flow of, 372
— Consumption in Galvanising Industry, 276

LITERATURE.

"ABSTRACTS, I.M.M.," New Monthly Publication of Institution of Mining and Metallurgy, 155
Abstracts on Social and International Aspects of Science, First Issue Unesco Quarterly Bulletin "Impact," 74
Abwasserreinigung, Praxis der, by Dr.-Ing. W. Hussemann, 580
Acceleration of Particles to High Energies : Physics in Industry, Convention of Electronics Group, Institute of Physics, 168
"A.C.E.C. Revue," Issue on Electricity in Mines, Journal of Ateliers de Constructions Electriques de Charleroi, 401
Aerodynamics, Indice de Bibliografia sobre Resistencia a la Marcha y Propulsion de Buques y Materias Hidro y Aerodinamicas Afines : Anos 1947 y 1948, 262
Aerodynamics, Practical, Elements of, by Prof. B. Jones, 363
Aeronautics. Science Museum. Lighter-than-Air Craft : Brief Outline of History and Development of Balloon and Airship, by M. J. B. Davy, 120
Air Conditioning, Heating and Ventilating Fundamentals, by Prof. W. H. Severns and Prof. J. R. Fellows, 168
Aircraft Gyroscopic Flight Instruments, Handbook of Sperry Gyroscope Co., Ltd., 383. See ERRATUM, 459
Airship and Balloon, Brief Outline of History and Development of : Lighter-than-Air Craft, Science Museum Publication, by M. J. B. Davy, 120
Algebra, Higher, for the Undergraduate, by Prof. M. J. Weiss, 324
Alloys of Copper and Copper, Machining of, Publication of Copper Development Association, 520
Almanacs and Calendars, 564
Aluminium Development Association, New Publications, 280
Analysis and Lubrication of Bearings, by Prof. M. C. Shaw and E. F. Macks, 98
Anglo-American Year Book, 1950, 118
Annuals and Reference Books, 117, 139, 208, 262, 419, 517, 549
Annual Tables of Electricity Undertakings of World, "Electrician," 1950-51, 549
Anti-Corrosive Compositions for Ships' Bottoms and Underwater Service on Steel, Formulation of, Report of British Iron and Steel Research Association, 424
Applied Mathematics Series, United States National Bureau of Standards, No. 6, Tables of Binomial Probability Distribution, 236 ; No. 8, Tables of Powers of Complex Numbers, by H. E. Salzer, 96
Automobile Engineers' Pocket Book, Bosch, 208
Aviation Supplement, 1950, Sell's National Directory and British Exporters' Register, 262
Aviation Year Book, Dunlop, 1950, 336

BALLOON and Airship, Brief Outline of History and Development of : Lighter-than-Air Craft, Science Museum Publication, by M. J. B. Davy, 120
Bearings, Analysis and Lubrication of, by Prof. M. C. Shaw and E. F. Macks, 98
Bearings, Tapered-Roller, for Rolling Stock, "Railway Manual," British Timken, Ltd., 76
Bessel Functions of the First Kind of Orders 52 Through 63, Tables of, Annuals of Computation Laboratory, Harvard University, Volume XII, 322
Bibliografia sobre Resistencia a la Marcha y Propulsion de Buques y Materias Hidro y Aerodinamicas Afines, Indice de : Anos 1947 y 1948, 262
Binomial Probability Distribution, Tables of. United States National Bureau of Standards Applied Mathematics Series No. 6, 236
Birmingham, City of, Handbook, 1950, Edited by F. W. Bradnock, 517
Birmingham Exchange Directory, 1950, 419
Books, New, Notes on, 24, 96, 120, 143, 168, 191, 264, 280, 283, 300, 324, 363, 424, 455, 487, 520, 552, 580
Books Received, 10, 34, 58, 82, 106, 130, 154, 178, 211, 222, 246, 292, 300, 348, 376, 406, 438, 470, 502, 534, 564
Bosch Kraftfahrtechnisches Taschenbuch, 208
Brains, Giant, or Machines that Think, by E. C. Berkeley, 459
Bridge Maintenance and Signalling, and Design Construction, Maintenance and Renewal of, Permanent Way : Railway Track, by K. F. Antia, 264
Bridge, Rigid-Frame, by A. G. Hayden and M. Barron, 283. See ERRATUM, 573
Bridge and Structural Engineering, International Association for : Publications, Volume 9, 1949, 459
British Chamber of Commerce, France, Year Book, 517
British Exporters' Register and Sell's National Directory, Aviation Supplement, 1950, 262
British Iron and Steel Research Association, Proceedings of Conference, Ashorne Hill, 1949, on Foundry Steel Melting, 264
British Iron and Steel Research Association, Report on Formulation of Anti-Corrosive Compositions for Ships' Bottoms and Underwater Service on Steel, 424
British Steam Horses, by G. Dow, 143
British Timken, Ltd., "Railway Manual," Tapered-Roller Bearings for Rolling Stock, 76
British Water Supply Practice, Manual of, Compiled by Institution of Water Engineers, 368

CALCULUS, Mechanics via, by P. W. Norris and W. S. Legge, 280
Calendars and Almanacs, 564
Cast Iron and Spun Iron Pipes, Deterioration of, Ministry of Health Committee Interim Report, 264
Castings, Solidification of : Review of Literature, by R. W. Ruddle. Monograph and Report Series No. 7, of Institute of Metals, 74
Catalogue of Collection of Firearms in Museum of Applied Science, Victoria, by E. H. Penrose, 280
Centenary of Short Brothers, Ltd., Brochure on Mowbray Quay to Pallion Yard, 1850-1950, 424
"Centreless Grinding," A Scrivener, Ltd., 81
Chemistry and Physics, Application of General Thermodynamics to, Modern Introduction, by Prof. J. R. Partington, 368
Chemistry, Use of High Temperatures in, 459
City of Birmingham Handbook, 1950, Edited by F. W. Bradnock, 517
Civil Engineering Drawings, Specifications and Quantities, by J. M. Rodger. Second Edition, Revised by F. J. Crabb, 24
Classified Directory, Engineering Industries Association, 1950-1951, 208
Coal, Plan for, Brochure of National Coal Board, 381
Coal Trades Directory and Colliery Year Book, 1950, 139
Coalfields, Guide to, 1950, Edited by R. H. Walkerdine and C. T. Jones, 517
Coasts, Protection of, and Harbour Making, Studies in : Winds, Waves and Maritime Structures, by R. R. Minikin, 124
Code, Electrical, Institute of Petroleum, 580
Collection of Firearms in Museum of Applied Science, Victoria, Descriptive Catalogue, by E. H. Penrose, 280
Collections Illustrating Time Measurement, Handbook of, Part II, Descriptive Catalogue, by Dr. F. A. B. Ward, 580
Colliery Year Book and Coal Trades Directory, 1950, 139
Colonial Road Problems, by H. W. W. Pollitt, 552
Column or Wall, Stress Distribution in Sla Forming Footing of, Publication of Laboratoire de Photoélasticité, Ecole Polytechnique Fédérale, Zürich, 488
Compaction of Soil : A Study of Performance of Plant, by F. H. P. Williams and D. J. Maclean, Road Research Technical Paper No. 17, 455
Companies, United States, Directory of, 517
Complex Numbers, Tables of Powers of, by H. E. Salzer. United States National Bureau of Standards, Applied Mathematics Series, No. 8, 96
Components, Symmetrical, Principles of, Introduction to Elements of Theory, by C. A. Grover, 168
Conference on Foundry Steel Melting, Ashorne Hill, 1949, Proceedings of, British Iron and Steel Research Association, 264
Construction and Operation, Railway, Requirements for Passenger Lines and Recommendations for Goods Lines, of Minister of Transport, 50
Contractors' Plant : Its Organisation, Operation and Maintenance, by H. O. Parrack, 149
Contribution à la Théorie Générale des Abaques à Plans Superposés, by Dr. G. R. Boulanger, 368
Copper Development Association, Machining of Copper and Its Alloys, 520
Corrosion-Resisting Compositions for Ships' Bottoms and Underwater Service on Steel, Formulation of, Report of British Iron and Steel Research Association, 424
Craftsmen, Sketching for, by Ernest Hoyle, 520
Cutting Tools for Metal, Handbook of, by F. Pütz, 455
Curves, Tables and Formulas, Mathematical, Rinehart, Compiled by Prof. H. D. Larsen, 96

DAYLIGHT Illumination, Measuring Diagram for, by P. J. Waldram, 283
Definitions and Formulæ for Students, Metallurgy, by E. R. Taylor, 264
Deflection of Plate in Form of Parallelogram, Publication of Laboratoire de Photoélasticité, Ecole Polytechnique, Fédérale, Zürich, 488
Design of Roads, Technical Aspect of, by S. Champion, 364
Deterioration of Cast Iron and Spun Iron Pipes, Ministry of Health Committee Interim Report, 264
Diagram, Measuring, for Daylight Illumination, by P. J. Waldram, 283
Differential Equations, by Prof. H. W. Reddick, 24
Diffusion, Gaseous, Process, Engineering Developments in, by M. Benedict and C. Williams, 397
Directory, Birmingham Exchange, 1950, 419
Directory, Classified, Engineering Industries Association, 1950-1951, 208
Directory, Classified, "Made in Wales," 139
Directory, Coal Trades, and Colliery Year Book, 1950, 139
Directory and Handbook, Iron and Steel, 1950, 117
Directory, National, Sell's, and British Exporters' Register, Aviation Supplement, 1950, 262
Directory of Railway Officials and Year Book, 1950-51, 262
Directory of United States Companies, 517
Distribution Methods of Structural Analysis, Introduction to, by R. W. Steed, 300
Distribution, Probability, Binomial, Tables of, United States National Bureau of Standards Applied Mathematics Series No. 6, 236
Drawings, Civil Engineering, Specifications and Quantities, by J. M. Rodger. Second Edition, Revised by F. J. Crabb, 24
Drop Forging, by H. Hayes, 168
Dunlop Aviation Year Book, 1950, 336

EARLY History of Science : A Short Handlist, 517
Earth Waves, by Prof. L. Don Leet, 397
Ecole Polytechnique Fédérale, Laboratoire de Photoélasticité, Zürich, Publications, 488
Education, Ministry of : Science Museum. Aeronautics. Lighter-than-Air Craft : Brief Outline of History and Development of Balloon and Airship, by M. J. B. Davy, 120
Effluent Water, Treatment of, by Dr.-Ing. W. Hussemann, 580
Electrical Code, Institute of Petroleum, 580
Electrical Engineers, Institution of, History of North-Western Centre, by L. H. A. Carr, 524
"Electrician" Annual Tables of Electricity Undertakings of World, 1950-51, 549
Electricity in Mines, Issue of "A.C.E.C. Revue," Journal of Ateliers de Constructions Electriques de Charleroi, 401
Electricity Supply, Manual of, Garcke's, Edited by F. G. Garrett, 419
Electronics Group, Institute of Physics, Convention on Physics in Industry : Acceleration of Particles to High Energies, 168
Elements of Heat Transfer and Insulation, by Prof. M. Jacob and Prof. G. A. Hawkins, 455
Elements of Practical Aerodynamics, by Prof. B. Jones, 363
Elementary Functions, Indefinite Integrals of, by Dr.-Ing. W. Meyer zur Capellen, 191
Elliptic Functions, Normal, Normalised Form of Weierstrass's Elliptic Functions, by A. R. Low, 168. See LETTER, 412
Energies, High, Acceleration of Particles to : Physics in Industry, Convention of Electronics Group, Institute of Physics, 168
Engines, Great, and Their Inventors : Story of Machine Power, by G. S. Ranshaw, 300
Engines, Heat, Ripper's, Revised by A. T. J. Kersey, 580
Engines, Traction, Worth Modelling, by W. J. Hughes, 552
Engineer, Position of, in Respect of Industrialisation of Netherlands, Study of, 324
Engineer's, Highway, Pocket Book, by Prof. F. G. Royal-Dawson, 580
Engineer's, Highway, Reference Book : for Local Government and Civil Engineers and Contractors, Edited by E. Stead, 419
Engineers : Record of Work of Engineers of Shell Petroleum Co., Ltd., in Second World War, by H. Nockolds, 284
Engineers, Technical Sketching and Visualisation for, by H. H. Katz, 324
Engineering, Bridge and Structural, International Association for : Publications, Volume 9, 1949, 459
Engineering Developments in Gaseous Diffusion Process, by M. Benedict and C. Williams, 397
Engineering Industries Association Classified Directory, 1950-1951, 208
English-French Lexique Technique, Compiled by G. Malgorn, 117
Equations, Differential, by Prof. H. W. Reddick, 24
Expenditure, Railway, and Volume of Traffic, by Dr. W. A. Timmerman, 144
Exponential-Integral Functions, Generalised, Tables of, Annals of Computation Laboratory of Harvard University, Volume XXI, 430
Exporters' Register, British, and Sell's National Directory, Aviation Supplement, 1950, 262
Extrapolation, Interpolation, and Smoothing of Stationary Time Series with Engineering Applications, by Prof. N. Wiener, 149

FALLACIES, Popular, by A. S. E. Ackerman, 149. See *Erratum*, 691
Fences, Snow, by H. Ll. D. Pugh, Road Research Technical Paper No. 19, 191
Firearms, Collection in Museum of Applied Science, Victoria, Descriptive Catalogue, by E. H. Penrose, 280
Flight Instruments, Gyroscopic, Aircraft, Handbook of Sperry Gyroscope Co., Ltd., 383. See *Erratum*, 459
Flight, Refuelling in, by C. H. Latimer-Needham, 520
Forging, Drop, by H. Hayes, 168
Formulæ and Definitions for Students, Metallurgy, by E. R. Taylor, 264
Formulas, Curves and Tables, Mathematical, Rinehart, Compiled by Prof. H. D. Larsen, 96
Formulation of Anti-Corrosive Compositions for Ships' Bottoms and Underwater Service on Steel, Report of British Iron and Steel Research Association, 424
Foundry Sand Control, Testing, Research and Development, by Dr. W. Davies, 487
Foundry Steel Melting, Proceedings of Conference, Ashorne Hill, 1949, British Iron and Steel Research Association, 264
Fracture of Metals, Lectures of Institution of Metallurgists, 363
France, British Chamber of Commerce, Year Book, 517
French-English Lexique Technique, Compiled by G. Malgorn, 117
Functions, Bessel, of First Kind of Orders 52 Through 63, Annals of Computation Laboratory, Harvard University, Volume XII, 322
Functions, Elementary, Indefinite Integrals of, by Dr.-Ing. W. Meyer zur Capellen, 191
Functions, Elliptic, Normal, Normalised Form of Weierstrass's Elliptic Functions, by A. R. Low, 168. See LETTER, 412
Functions, Generalised Exponential-Integral, Tables of, Annals of Computation Laboratory of Harvard University, Volume XXI, 430
Function $\frac{\sin\phi}{\phi}$ and Its First Eleven Derivatives, Annals of Computation Laboratory, Harvard University, Volume XXII, 340
Fundamental Principles of Water Power Engineering, by F. F. Ferguson, 192

GARCKE'S Manual of Electricity Supply, Edited by F. G. Garrett, 419
Gas and Steam Turbines, by B. G. A. Skrotzki and W. A. Vopat, 143
Gaseous Diffusion Process, Engineering Developments in, by M. Benedict and C. Williams, 397
Gasturbinen mit Gleichdruckverbrennung, by R. Friedrich, 429
Gauges and Gauging Practice at Tube Works, Compiled by F. W. Clark, 520
Gears, Spur, with Straight Teeth, Parts I, II, and III, by R. Ritter, 455

Generalised Exponential-Integral Functions, Tables of, Annals of Computation Laboratory of Harvard University, Volume XXI, 430
Generalised Theory of Gravitation, Appendix to Fourth Edition of Meaning of Relativity, by Dr. A. Einstein, 4.
Geophysical Surveying, Volume I, by E. and J.-P. Rothé, 556
Giant Brains, or Machines that Think, by E. C. Berkeley, 459
Goods Lines, Recommendations for, and Requirements for Passenger Lines, of Minister of Transport in Regard to Railway Construction and Operation, 50
Gravitation, Generalised Theory of, Appendix to Fourth Edition of Meaning of Relativity, by Dr. A. Einstein, 4
Great Engines and Their Inventors: Story of Machine Power, by G. S. Ranshaw, 300
Grundriss der Photogrammetrie, by Prof. K. Schwidefsky, 424
Guide to Coalfields, 1950, Edited by R. H. Walkerdine and C. T. Jones, 517
Gyroscopic Flight Instruments, Aircraft, Handbook of Sperry Gyroscope Co., Ltd., 383. See *Erratum*, 459

HAND Tools for Wood and Metal Work, by R. Harries, 488
Handbook, City of Birmingham, 1950, Edited by F. W. Bradnock, 517
Handbook of Collections Illustrating Time Measurement, Part II, Descriptive Catalogue, by Dr. F. A. B. Ward, 580
Handbook and Directory, Iron and Steel, 1950, 117
Handbook, Hydroelectric, by W. P. Creager and J. D. Justin, 315
Handbook of Metal-Cutting Tools, by F. Pütz, 455
Handlist, Short: Early History of Science, 517
Harbour Making and Protection of Coasts, Studies in: Winds, Waves and Maritime Structures, by R. R. Minikin, 124
Hardenability and Steel Selection, by W. Crafts and J. L. Lamont, 424
Harvard University, Annals of Computation Laboratory, Volume XII, Tables of Bessel Functions of First Kind of Orders 52 Through 63, 322; Volume XXI, Tables of Generalised Exponential-Integral Functions, 430; Volume XXII, Tables of the Function $\frac{\sin\phi}{\phi}$ and Its First Eleven Derivatives, 340
Hautes Temperatures et leurs Utilisations en Chimie, Volumes I and II, 459
Health, Ministry of, Committee of, Interim Report on Cast Iron and Spun Iron Pipes, 264
Heat Engines, Ripper's, Revised by A. T. J. Kersey, 580
Heat Transfer, Volume I, by Prof. M. Jakob, 172
Heat Transfer and Insulation, Elements of, by Prof. M. Jacob and Prof. G. A. Hawkins, 455
Heating, Ventilating and Air Conditioning Fundamentals, by Prof. W. H. Severns and Prof. J. R. Fellows, 168
Helps for Students of History, No. 52. Early History of Science: A Short Handlist, 517
High Energies, Acceleration of Particles to: Physics in Industry, Convention of Electronics Group, Institute of Physics, 168
High Temperatures and Their Utilisation in Chemistry, Volumes I and II, 459
Higher Algebra for the Undergraduate, by Prof. M. J. Weiss, 324
Highland, West, Steamers, by C. L. D. Duckworth and G. E. Langmuir, 264
Highway Engineer's Pocket Book, by Prof. F. G. Royal-Dawson, 580
Highway Engineer's Reference Book: for Local Government and Civil Engineers and Contractors, Edited by E. Stead, 419
Histoire de Mécanique, by R. Dugas, 267
History and Development of Balloon and Airship, Brief Outline of: Lighter-than-Air Craft, by M. J. B. Davy, Science Museum Publication, 120
History of North-Western Centre of Institution of Electrical Engineers, by L. H. A. Carr, 524
History of Science, Early: A Short Handlist, 517
History of Sugar, Volume II, by N. Deerr, 4
Horses, Steam, British, by G. Dow, 143
Hydrodynamics, Indice de Bibliografía sobre Resistencia a la Marcha y Propulsion de Buques y Materias Hidro y Aerodinamicas Afines: Anos 1947 y 1948, 262
Hydroelectric Handbook, by W. P. Creager and J. D. Justin, 315
Hydrology, by Prof. C. O. Wisler and E. F. Brater, 172

ILLUMINATION, Daylight, Measuring Diagram for, by P. J. Waldram, 283
"I.M.M. Abstracts," New Monthly Publication of Institution of Mining and Metallurgy, 155
"Impact," First Issue Unesco Quarterly Bulletin of Abstracts on Social and International Implications of Science, 74
Indefinite Integrals of Elementary Functions, by Dr.-Ing. W. Meyer zur Capellen, 191
Index of Nomograms, Compiled and Edited by Prof. D. P. Adams, 139
Indice de Bibliografía sobre Resistencia a la Marcha y Propulsion de Buques y Materias Hidro y Aerodinamicas Afines: Anos 1947 y 1948, 262
Industrialisation of Netherlands, Position of Engineer in Respect of, Study of, 324
Industry, Physics in: Acceleration of Particles to High Energies, Convention of Electronics Group, Institute of Physics, 168
Institute of Petroleum Electrical Code, 580
Institution of Electrical Engineers, North-Western Centre, History of, by L. H. A. Carr, 524
Instruments, Flight, Gyroscopic, Aircraft, Handbook of Sperry Gyroscope Co., Ltd., 383. See *Erratum*, 459
Insulation and Heat Transfer, Elements of, by Prof. M. Jacob and Prof. G. A. Hawkins, 455
Integral-Exponential Functions, Generalised, Tables of, Annals of Computation Laboratory of Harvard University, Volume XXI, 430
Integraltafeln, Sammlung unbestimmter Integrale elementarer Funktionen, by Dr.-Ing. W. Meyer zur Capellen, 191
Interconnection, Power System (Transmission Problems), by H. Rissik, 144
International Association for Bridge and Structural Engineering: Publications, Volume 9, 1949, 459
International and Social Aspects of Science, Abstracts of, First Issue Unesco Quarterly Bulletin "Impact," 74
Interpolation, Extrapolation, and Smoothing of Stationary Time Series with Engineering Applications, by Prof. N. Wiener, 149
Introduction to Distribution Methods of Structural Analysis, by R. W. Steed, 300.
Inventions, Patents and Monopoly, by P. Meinhardt, 283
Inventors and Great Engines: Story of Machine Power, by G. S. Ranshaw, 300
Ionosphere and Short-Wave Radio, by T. W. Bennington, 300
Iron Pipes, Cast and Spun, Deterioration of, Ministry of Health Committee Interim Report, 264
Iron and Steel Directory and Handbook, 1950, 117

KRAFTFAHRTECHNISCHES Taschenbuch, Bosch, 208

LABORATOIRE de Photoélasticité, Ecole Polytechnique Fédérale, Zürich, Publications, 488
Laundries and Laundry Requisites, 1950, 139
Lexique Technique Anglais-Français, Compiled by G. Malgorn, 117
Lighter-than-Air Craft: Brief Outline of History and Development of Balloon and Airship, by M. J. B. Davy, Science Museum Publication, 120
Lines, Passenger, Requirements for, and Recommendations for Goods Lines of Minister of Transport in Regard to Railway Construction and Operation, 50
Literature, 4, 28, 50, 74, 98, 124, 149, 172, 236, 267, 315, 322, 340, 368, 397, 429, 459, 524, 556
Live Steam Book, by "L.B.S.C.," 455
London, University College Calendar, 1950-51, 517
Low Temperatures, Properties of Metallic Materials at, by Major P. L. Teed, 455
Lubrication and Analysis of Bearings, by Prof. M. C. Shaw and E. F. Macks, 98

MACHINE Power, Story of: Great Engines and Their Inventors, by G. S. Ranshaw, 300
Machines that Think, or Giant Brains, by E. C. Berkeley, 459
Machine Tools, Metrology and Ancillary Subjects, Part II, Modern Workshop Technology, Edited by Prof. H. W. Baker, 236. See *Addenda*, 340
Machining of Copper and Its Alloys, Publication of Copper Development Association, 520
"Made in Wales" Classified Directory, 139
Manual of British Water Supply Practice, Compiled by Institution of Water Engineers, 368
Manual of Electricity Supply, Garcke's, Edited by F. G. Garrett, 419
Maritime Structures and Winds and Waves: Studies in Harbour Making and Protection of Coasts, by R. R. Minikin, 124
Materials, Metallic, at Low Temperatures, Properties of, by Major P. L. Teed, 455
Materials, Strength of, by B. B. Low, 28
Mathematical Tables, Formulas and Curves, Rinehart, Compiled by Prof. H. D. Larsen, 96
Mathematics, Indefinite Integrals of Elementary Functions, by Dr.-Ing. W. Meyer zur Capellen, 191
Mathematics, Progressive, by P. Clyne, 168
Mathematics, Tables of Bessel Functions of First Kind of Orders 52 Through 63, Annals of Computation Laboratory, Harvard University, Volume XII, 322
Mathematics, Tables of Binomial Probability Distribution, United States National Bureau of Standards Applied Mathematics Series No. 6, 236
Mathematics, Tables of Function $\frac{\sin\phi}{\phi}$ and its First Eleven Derivatives, Annals of Computation Laboratory, Harvard University, Volume XXII, 340
Mathematics, Tables of Generalised Exponential-Integral Functions. Annals of Computation Laboratory, Harvard University, Volume XXI, 430
Mathematics, Tables of Powers of Complex Numbers, by H. E. Salzer. United States National Bureau of Standards, Applied Mathematics Series No. 8, 96
Meaning of Relativity. Fourth Edition, with Appendix on Generalised Theory of Gravitation, by Dr. A. Einstein, 4
Measurement, Time, Handbook of Collections Illustrating, Part II. Descriptive Catalogue, by Dr. F. A. B. Ward, 580
Measuring Diagram for Daylight Illumination, by P. J. Waldram, 283
Mechanics via the Calculus, by P. W. Norris and W. S. Legge, 280
Mechanics, History of, by R. Dugas, 267
Mechanics, Variational Principles of, by C. Lanczos, 120
Memorandum, Town and Country Planning Act, 1947, Royal Institution of Chartered Surveyors, 283
Metal-Cutting Tools, Handbook of, by F. Pütz, 455
Metal and Wood Work, Hand Tools for, by R. Harries, 488
Metals, Fracture of, Lectures of Institution of Metallurgists, 363
Metals, Institute of, Monograph and Report Series No. 7. Solidification of Castings: Review of Literature, by R. W. Ruddle, 74
Metals, The Rarer, by J. de Ment and Dr. H. C. Dake, 487
Metallic Materials at Low Temperatures, Properties of, by Major P. L. Teed, 455
Metallurgists, Institution of, Lectures on Fracture of Metals, 363
Metallurgy, Definitions and Formulæ for Students, by E. R. Taylor, 264
Metallurgy, Solidification of Castings: A Review of the Literature. Monograph and Report Series, No. 7, Institute of Metals, 74
Metrology, Machine Tools and Ancillary Subjects, Part II, Modern Workshop Technology, Edited by Prof. H. W. Baker, 236. See *Addenda*, 340
Mines, Electricity in, Issue of "A.C.E.C. Revue," Journal of Ateliers de Constructions Electriques de Charleroi, 401
Mining and Metallurgy, Institution of, New Monthly Publication "I.M.M. Abstracts," 155
Minister of Transport, Requirements for Passenger Lines and Recommendations for Goods Lines, in Regard to Railway Construction and Operation, 50
Ministry of Education, Science Museum. Aeronautics. Lighter-than-Air Craft: Brief Outline of History and Development of Balloon and Airship, by M. J. B. Davy, 120
Modelling, Traction Engines Worth, by W. J. Hughes, 552
Modern Railroad Structures, by C. P. Disney and R. F. Legget, 50
Modern Workshop Technology: Part II.—Machine Tools and Metrology and Ancillary Subjects, Edited by Prof. H. W. Baker, 236
Monopoly, Inventions and Patents, by P. Meinhardt, 283
Motor Engineers' Pocket Book, Bosch, 208
Mowbray Quay to Pallion Yard, 1850-1950, Brochure Commemorating Centenary of Short Brothers, Ltd., 424
Museum of Applied Science, Victoria, Descriptive Catalogue of Collection of Firearms in, by E. H. Penrose, 280
Museum, Science, Aeronautics, Lighter-than-Air Craft: Brief Outline of History and Development of Balloon and Airship, by M. J. B. Davy, 120
Museum, Science, Handbook of Collections Illustrating Time Measurement, Part II, Descriptive Catalogue, by Dr. F. A. B. Ward, 580

NATIONAL Aeronautical Collection, Science Museum. Lighter-than-Air Craft: Brief Outline of History and Development of Balloon and Airship, by M. J. B. Davy, 120
National Coal Board, Brochure on Plan for Coal, 381
National Directory, Sell's, and British Exporters' Register, Aviation Supplement, 1950, 282
Netherlands, Industrialisation of, Study of Position of Engineer in Respect of, 324
Nile Basin, by Dr. H. E. Hurst and R. P. Black. Third Supplement to Volume II, Measured Discharges of Nile and Its Tributaries, 1938-42, 368
Nomograms, Index of, Compiled and Edited by Prof. D. P. Adams, 139
Nomograms, Plane, Superposed, Contribution to General Theory of, by Dr. G. R. Boulanger, 368
Normal Elliptic Functions, Normalised Form of Weierstrass's Elliptic Functions, by A. R. Low, 168. See LETTER, 412
North-Western Centre of Institution of Electrical Engineers, History of, by L. H. A. Carr, 524
Notes on New Books, 24, 96, 120, 143, 168, 191, 264, 280, 283, 300, 324, 363, 424, 455, 487, 520, 552, 580
Numbers, Complex, Tables of Powers of, by H. E. Salzer. United States National Bureau of Standards, Applied Mathematics Series, No. 8, 96

OPERATION and Construction, Railway, Requirements for Passenger Lines and Recommendations for Goods Lines, of Minister of Transport, 50

PAINTS for Underwater Service on Steel and Ships' Bottoms, Formulation of Anti-Corrosive Compositions for, Report of British Iron and Steel Research Association, 424
Pallion Yard to Mowbray Quay, 1850-1950, Brochure Commemorating Centenary of Short Brothers, Ltd., 424
Parallelogram, Deflection of Plate in Form of, Publication of Laboratoire de Photoélasticité, Ecole Polytechnique Fédérale, Zürich, 488
Particles, Acceleration to High Energies: Physics in Industry, Convention of Electronics Group, Institute of Physics, 168
Passenger Lines, Requirements for, and Recommendations for Goods Lines of Minister of Transport in Regard to Railway Construction and Operation, 50
Patents, Inventions and Monopoly, by P. Meinhardt, 283
Permanent Way, Design, Construction, Maintenance and Renewal of: Railway Track, by K. F. Antia, 264
Petroleum, Institute of, Electrical Code, 580
Photoélasticité, Laboratoire de, Ecole Polytechnique Fédérale, Zürich, Publications, 488
Photographic Surveying, by Prof. K. Schwidefsky, 424
Physics and Chemistry, Application of General Thermodynamics to, Modern Introduction, by Prof. J. R. Partington, 368
Physics in Industry, Acceleration of Particles to High Energies, Convention of Electronics Group, Institute of Physics, 168
Pipes, Cast Iron and Spun Iron, Deterioration of, Ministry of Health Committee Interim Report, 264
Plan for Coal, Brochure of National Coal Board, 381
Plane Nomograms, Superposed, Contribution to General Theory of, by Dr. G. R. Boulanger, 368
Plant, Contractors': Its Organisation, Operation and Maintenance, by H. O. Parrack, 149
Plate in Form of Parallelogram, Deflection in, Publication of Laboratoire de Photoélasticité, Ecole Polytechnique Fédérale, Zürich, 488
Pocket Book, Highway Engineer's, by Prof. F. G. Royal-Dawson, 580
Pocket Book, Motor Engineers', Bosch, 208
Popular Fallacies, by A. S. E. Ackermann, 149. See ERRATUM, 691
Position of Engineer in respect of Industrialisation of Netherlands, Study of, 324
Power System Interconnection (Transmission Problems), by H. Rissik, 144
Power, Water, Engineering, Fundamental Principles of, by F. F. Fergusson, 192
Powers of Complex Numbers, Tables of, by H. E. Salzer. United States National Bureau of Standards, Applied Mathematics Series, No. 8, 96
Practical Aerodynamics, Elements of, by Prof. B. Jones, 363
Praxis der Abwasserreinigung, by Dr. -Ing. W. Hussmann, 580
Principles of Mechanics, Variational, by C. Lanczos, 120
Principles of Symmetrical Components, Introduction to Elements of Theory, by C. A. Grover, 168
Probability Distribution, Binomial, Tables of. United States National Bureau of Standards Applied Mathematics Series No. 6, 236
Problems, Road, Colonial, by H. W. W. Pollitt, 552
Proceedings, Conference on Foundry Steel Melting, Ashorne Hill, 1949, British Iron and Steel Research Association, 264
Progressive Mathematics, by P. Clyne, 168
Properties of Metallic Materials at Low Temperatures, by Major P. L. Teed, 455
Prospection Géophysique, Volume I, by E. and J.-P. Rothé, 556

QUANTITIES and Specifications, Civil Engineering Drawings, by J. M. Rodger. Second Edition, Revised by F. J. Crabb, 24

RADIO, Short-Wave, and Ionosphere, by T. W. Bennington, 300
Railroad Structures, Modern, by C. P. Disney and R. F. Legget, 50
Railway Construction and Operation, Requirements for Passenger Lines and Recommendations for Goods Lines, of Minister of Transport, 50
Railway Expenditure and Volume of Traffic, by Dr. W. A. Timmerman, 144
"Railway Manual," Tapered-Roller Bearings for Rolling Stock, British Timken, Ltd., 76
Railway Officials, Directory and Year Book of, 1950-51, 262
Railway, Southern, 1923-1947: Chronicle and Record, by R. A. Savill, 364
Railway Track: Design, Construction, Maintenance and Renewal of Permanent Way, by K. F. Antia, 264
Rarer Metals, by J. de Ment and Dr. H. C. Dake, 487
Ready Reckoner, Scientist's, by Dr. W. Roman, 28
Reference Book, Highway Engineer's: for Local Government and Civil Engineers and Contractors, Edited by E. Stead, 419
Reference Books. See also *Annuals*
Refuelling in Flight, by C. H. Latimer-Needham, 520
Relativity, Meaning of, Fourth Edition, with Appendix on Generalised Theory of Gravitation, by Dr. A. Einstein, 4
Requirements for Passenger Lines and Recommendations for Goods Lines of Minister of Transport in Regard to Railway Construction and Operation, 50
Resorts, Étude Complète et Méthode Rapide de Calcul, by C. Reynaï, 520
Rigid-Frame Bridge, by A. G. Hayden and M. Barron, 283. See ERRATUM, 573
Rinehart Mathematical Tables, Formulas and Curves, Compiled by Prof. H. D. Larsen, 96
Ripper's Heat Engines, Revised by A. T. J. Kersey, 580
Roads: Their Alignment, Layout and Construction, by Prof. R. G. Batson, 340
Roads, Design of, Technical Aspect of, by S. Champion, 364
Road Problems, Colonial, by H. W. W. Pollitt, 552
Road Research Technical Paper No. 17, Compaction of Soil: A Study of Performance of Plant, by F. H. P. Williams and D. J. Maclean, 455
Road Research Technical Paper No. 19, 191
Roller Bearings for Rolling Stock, "Railway Manual," British Timken, Ltd., 76
Royal Institution of Chartered Surveyors, Memorandum on Town and Country Planning Act, 1947, 283

SAND, Foundry, Control, Testing, Research and Development, by Dr. W. Davies, 487
Science, Early History of: A Short Handlist, 517
Science, International and Social Aspects of, Abstracts of, First Issue Unesco Quarterly Bulletin "Impact," 74
Science Museum. Aeronautics. Lighter-than-Air Craft: Brief Outline of History and Development of Balloon and Airship, by M. J. B. Davy, 120
Science Museum, Handbook of Collections Illustrating Time Measurement, Part II. Descriptive Catalogue, by Dr. F. A. B. Ward, 580
Scientist's Ready Reckoner, by Dr. W. Roman, 28
Scrivener, A., Ltd., "Centreless Grinding," 81
Sell's National Directory and British Exporters' Register, Aviation Supplement, 1950, 262
Shell Petroleum Co., Ltd., Record of Work of Engineers in Second World War, by H. Nickolds, 264

Ships' Bottoms, Anti-Corrosive Compositions for, and Underwater Service on Steel, Formulation of, Report of British Iron and Steel Research Association, 424
Ship-Model Tank, Spanish Ministry of Marine, Madrid, Bibliography of Hydrodynamical and Aerodynamical Literature, 1947-1948, 262
Short Brothers, Ltd., Centenary of, Brochure on Mowbray Quay to Pallion Yard, 1850-1950, 424
Short-Wave Radio and Ionosphere, by T. W. Bennington, 300
Signalling and Bridge Maintenance, Design, Construction, Maintenance and Renewal of Permanent Way: Railway Track, by K. F. Antia, 264
Sketching for Craftsmen, by Ernest Hoyle, 520
Sketching, Technical, and Visualisation for Engineers, by H. H. Katz, 324
Slab Forming Footing of Column or Wall, Stress Distribution in, Publication of Laboratoire de Photoélasticité, Ecole Polytechnique Fédérale, Zürich, 488
Slide Rules, by W. A. Surfleet, 96
Smoothing, Extrapolation, and Interpolation of Stationary Time Series with Engineering Applications, by Prof. N. Wiener, 149
Snow Fences, by H. Ll. D. Pugh, Road Research Technical Paper No. 19, 191
Social and International Aspects of Science, Abstracts of, First Issue Unesco Quarterly Bulletin, "Impact," 74
Soil, Compaction of: A Study of Performance of Plant, by F. H. P. Williams and D. J. Maclean, Road Research Technical Paper No. 17, 455
Solidification of Castings: Review of Literature, by R. W. Ruddle. Monograph and Report Series No. 7, of Institute of Metals, 74
Southern Railway, 1923-1947: Chronicle and Record, by R. A. Savill, 364
Spanish Ministry of Marine Ship-Model Tank, Madrid, Bibliography of Hydrodynamical and Aerodynamical Literature, 1947-1948, 262
Specifications and Quantities. Civil Engineering Drawings, by J. M. Rodger. Second Edition, Revised by F. J. Crabb, 24.
Sperry Gyroscope Co., Ltd., Handbook on Aircraft Gyroscopic Flight Instruments, 383. See *Erratum*, 459
Springs, Design and Use of, by C. Reynal, 520
Spun Iron and Cast Iron Pipes, Deterioration of, Ministry of Health Committee Interim Report, 264
Spur Gears with Straight Teeth, Parts I, II and III, by R. Ritter, 455
Stationary Time Series with Engineering Applications, Extrapolation, Interpolation, and Smoothing of, by Prof. N. Wiener, 149
Steam and Gas Turbines, by B. G. A. Skrotzki and W. A. Vopat, 143
Steam Horses, British, by G. Dow, 143
Steam, Live, Book, by "L.B.S.C.," 455
Steamers, West Highland, by C. L. D. Duckworth and G. E. Langmuir, 264
Steel and Iron Directory and Handbook, 1950, 117
Steel Melting, Foundry, Proceedings of Conference, Ashorne Hill, 1949, British Iron and Steel Research Association, 264
Steel Selection and Hardenability, by W. Crafts and J. L. Lamont, 424
Steel, Underwater Service on, and Ships' Bottoms, Formulation of Anti-Corrosive Compositions for, Report of British Iron and Steel Research Association, 424
Strength of Materials, by B. B. Low, 28
Stress Distribution in Slab Forming Footing of Column or Wall, Publication of Laboratoire de Photoélasticité, Ecole Polytechnique Fédérale, Zürich, 488
Structural Analysis, Distribution Methods of, Introduction to, by R. W. Steed, 300
Structural and Bridge Engineering, International Association for: Publications, Volume 9, 1949, 459
Structures, Maritime, and Winds and Waves: Studies in Harbour Making and Protection of Coasts, by R. R. Minikin, 124
Structures, Railroad, Modern, by C. P. Disney and R. F. Legget, 50
Students, Definitions and Formulæ for, Metallurgy, by E. R. Taylor, 264
Studies in Harbour Making and Protection of Coasts: Winds, Waves and Maritime Structures, by R. R. Minikin, 124
Sugar, History of, Volume II, by N. Deerr, 4
Superposed Plane Nomograms, Contribution to General Theory of, by Dr. G. R. Boulanger, 368
Surveying, Geophysical, Volume I, by E. and J.-P. Rothé, 556
Surveying, Photographic, by Prof. K. Schwidefsky, 424
Surveyors, Chartered, Royal Institution of, Memorandum on Town and Country Planning Act, 1947, 283
Symmetrical Components, Principles of, Introduction to Elements of Theory, by C. A. Grover, 168

TABLES, Annual, of Electricity Undertakings of World, "Electrician," 1950-51, 549
Tables of Binomial Probability Distribution, United States National Bureau of Standards Applied Mathematics Series No. 6, 236
Tables of First Kind of Bessel Functions of Orders 52 Through 63, Annals of Computation Laboratory, Harvard University, Volume XII, 322
Tables, Formulas and Curves, Mathematical, Rinehart, Compiled by Prof. H. D. Larsen, 96
Tables of Function $\frac{\sin \phi}{\phi}$ and its First Eleven Derivatives, Annals of Computation Laboratory, Harvard University, Volume XXII, 340
Tables of Generalised Exponential-Integral Functions. Annals of Computation Laboratory of Harvard University, Volume XXI, 430
Tables of Powers of Complex Numbers, by H. E. Salzer. United States National Bureau of Standards, Applied Mathematics Series, No. 8, 96
Tank, Ship-Model, Spanish Ministry of Marine, Madrid, Bibliography of Hydrodynamical and Aerodynamical Literature, 1947-1948, 262
Taschenbuch, Kraftfahrtechnisches, Bosch, 208
Technical Aspect of Design of Roads, by S. Champion, 364
Technical Sketching and Visualisation for Engineers, by H. H. Katz, 324
Technology, Modern Workshop: Part II.—Machine Tools and Metrology and Ancillary Subjects, Edited by Prof. H. W. Baker, 236. See *Addenda*, 340
Temperatures, High, and Their Utilisation in Chemistry, 459
Thermodynamics: Modern Introduction to General Thermodynamics and Its Application to Chemistry and Physics, by Prof. J. R. Partington, 368
Time Measurement, Handbook of Collections Illustrating, Part II, Descriptive Catalogue, by Dr. F. A. B. Ward, 580
Time Series, Stationary, with Engineering Applications, Extrapolation, Interpolation, and Smoothing of, by Prof. N. Wiener, 149
Tools, Hand, for Wood and Metal Work, by R. Harries, 488
Town and Country Planning Act, 1947, Memorandum on, Royal Institution of Chartered Surveyors, 283
Track, Railway: Design, Construction, Maintenance and Renewal of Permanent Way, by K. F. Antia, 264
Traction Engines Worth Modelling, by W. J. Hughes, 552
Traffic, Volume of, and Railway Expenditure, by Dr. W. A. Timmerman, 144
Transmission Problems: Power System Interconnection, by H. Risaik, 144
Transport, Minister of, Requirements for Passenger Lines and Recommendations for Goods Lines, in Regard to Railway Construction and Operation, 50
Tube Works Gauges and Gauging Practice, Compiled by F. W. Clark, 520
Turbine, Gas, Constant-Pressure, by R. Friedrich, 429
Turbines, Steam and Gas, by B. G. A. Skrotzki and W. A. Vopat, 143

UNDERGRADUATE, Higher Algebra for, by Prof. M. J. Weiss, 324
United Nations Educational, Scientific and Cultural Organisation (Unesco), First Issue Quarterly Bulletin "Impact," 74
United States Companies, Directory of, 517
United States National Bureau of Standards, Applied Mathematics Series No. 6, Tables of Binomial Probability Distribution, 236
United States National Bureau of Standards, Applied Mathematics Series No. 8, Tables of Powers of Complex Numbers, by H. E. Salzer, 96
University College, London, Calendar, 1950-51, 517

VARIATIONAL Principles of Mechanics, by C. Lanczos, 120
Ventilating, Heating and Air Conditioning Fundamentals, by Prof. W. H. Severns and Prof. J. R. Fellows, 168
Victoria, Museum of Applied Science, Descriptive Catalogue of Collection of Firearms in, by E. H. Penrose, 280
Visualisation and Technical Sketching for Engineers, by H. H. Katz, 324
Volume of Traffic and Railway Expenditure, by Dr. W. A. Timmerman, 144
Vraagstuk van Technisch Kader in verband met de Verdere Industrialisatie van ons Land, 324

WALES, Classified Directory of Products Made in, 139
Wall or Column, Stress Distribution in Slab Forming Footing of, Publication of Laboratoire de Photoélasticité, Ecole Polytechnique Fédérale, Zürich, 488
Water, Effluent, Treatment of, by Dr.-Ing. W. Hussemann, 580
Water Power Engineering, Fundamental Principles of, by F. F. Fergusson, 192
Water Supply Practice, British, Manual of, Compiled by Institution of Water Engineers, 368
Waves, Earth, by Prof. L. Don Leet, 397
Weierstrass's Elliptic Functions, Normalised Form of: Normal Elliptic Functions, by A. R. Low, 168. See LETTER, 42
Werkzeug-Handbuch über Schneidwerkzeuge für Metallbearbeitung, by F. Pütz, 455
West Highland Steamers, by C. L. D. Duckworth and G. E. Langmuir, 264
Winds, Waves and Maritime Structures: Studies in Harbour Making and Protection of Coasts, by R. R. Minikin, 124
Wood and Metal Work, Hand Tools for, by R. Harries, 488
Workshop Technology, Modern: Part II.—Machine Tools and Metrology and Ancillary Subjects, Edited by Prof. H. W. Baker, 236. See *Addenda*, 340
World, Electricity Undertakings of, "Electrician" Annual Tables of, 1950-51, 549

YEAR Book, Anglo-American, 1950, 118
Year Book, Aviation, Dunlop, 1950, 336
Year Book, British Chamber of Commerce, France, 517
Year Book, Colliery, and Coal Trades Directory, 1950, 139
Year Book and Directory of Railway Officials, 1950-51, 262
Year Books. See also *Annuals*

ZAHNRADGETRIEBE, Parts I, II, and III, by R. Ritter, 455

ONE-PAGE AND TWO-PAGE PLATES.

PLATE.
I. Loch Sloy Hydro-Electric Scheme (facing page 2)
II. Loch Sloy Scheme of North of Scotland Hydro-Electric Board (facing page 3)
III. Exhibits at Royal Agricultural Show, Oxford (facing page 42)
IV. Exhibits at Royal Agricultural Show, Oxford (facing page 43)
V. Exhibits at Royal Agricultural Show, Oxford (facing page 66)
VI. Exhibits at Royal Agricultural Show, Oxford (facing page 67)
VII. 72-in. Blake Jaw Crusher for Copper Mine (facing page 74)
VIII. College of Aeronautics, Cranfield (facing page 126)
IX. College of Aeronautics, Cranfield (between pages 126 and 127)
X. College of Aeronautics, Cranfield (between pages 126 and 127)
XI. College of Aeronautics, Cranfield (facing page 127)
XII. Fire Damage to Turbo-Electric Liner "Monarch of Bermuda" (facing page 152)
XIII. Quadruple-screw Turbo-Electric Liner "New Australia"; formerly "Monarch of Bermuda" (between pages 152 and 153)
PLATE.
XIV. Quadruple-Screw Turbo-Electric Liner "New Australia" (facing page 153)
XV. Machine Tools for Small and Medium Gears (facing page 170)
XVI. 4,000-kW Pass-Out Turbine (facing page 210)
XVII. 4,000-kW Pass-Out Turbine (facing page 211)
XVIII. 2,700-H.P. 3,000-Volt Direct-Current Locomotive for South Africa (between pages 234 and 235)
XIX. Continuous Rolling Mill for Aluminium Sheet at Rogerstone (facing page 266)
XX. Continuous Rolling Mill for Aluminium Sheet at Rogerstone (facing page 267)
XXI. Continuous Rolling Mill for Aluminium Sheet at Rogerstone (facing page 282)
XXII. Continuous Rolling Mill for Aluminium Sheet at Rogerstone (facing page 283)
XXIII. Stone-Kamewa Reversible-Pitch Propeller (facing page 303)
XXIV. Wassen Power Station on River Reuss, Switzerland (facing page 306)
XXV. Wassen Power Station on River Reuss, Switzerland (facing page 314)
XXVI. Continuous Rolling Mill for Aluminium at Rogerstone (facing page 338)
PLATE.
XXVII. Continuous Rolling Mill for Aluminium Sheet at Rogerstone (facing page 339)
XXVIII. Exhibits at Commercial Motor Transport Exhibition (facing page 342)
XXIX. Exhibits at Commercial Motor Transport Exhibition (facing page 343)
XXX. Exhibits at Public Works and Municipal Services Exhibition (facing page 370)
XXXI. Heating and Ventilating System of New House of Commons (facing page 394)
XXXII. Plant Room for Air-Conditioning and Heating New House of Commons (between pages 394 and 395)
XXXIII. Heating and Ventilating System of New House of Commons (facing page 395)
XXXIV. Tummel-Garry Hydro-Electric Scheme (facing page 426)
XXXV. Tummel-Garry Hydro-Electric Scheme (facing page 427)
XXXVI. Exhibits at Public Works and Municipal Services Exhibition (facing page 446)
XXXVII. Exhibits at Public Works and Municipal Services Exhibition (facing page 447)
XXXVIII. 100-Ton Heavy-Duty Trailer for Transport of Excavating Machinery (facing page 458)
PLATE.
XXXIX. 100-Ton Heavy-Duty Trailer for Transport of Excavating Machinery (facing page 459)
XL. Tummel-Garry Hydro-Electric Scheme (facing page 462)
XLI. P. & O. Twin-Screw Passenger Liner "Chusan" (facing page 490)
XLII. P. & O. Twin-Screw Passenger Liner "Chusan" (between pages 490 and 491)
XLIII. P. & O. Twin-Screw Passenger Liner "Chusan" (facing page 491)
XLIV. Swedish Lighthouses on Submerged Sites (facing page 512)
XLV. Swedish Lighthouses on Submerged Sites (facing page 513)
XLVI. P. & O. Twin-Screw Passenger Liner "Chusan" (facing page 526)
XLVII. P. & O. Twin-Screw Passenger Liner "Chusan" (between pages 526 and 527)
XLVIII. P. & O. Twin-Screw Passenger Liner "Chusan" (facing page 527)
XLIX. St. Luc Marshalling Yard of Canadian Pacific Railway (between pages 554 and 555)
L. Denny-Brown Stabiliser for S.S. "Chusan" (facing page 558)
LI. Denny-Brown Stabiliser for S.S. "Chusan" (between pages 558 and 559)
LII. Denny-Brown Stabiliser for S.S. "Chusan" (facing page 559)

PARAGRAPHS.

Accidents :

Explosion in "Viking" Air Liner, 341
Photo-Electric Machine Guards, Use in Accident Prevention, 280
Tudor Aircraft, Accident to, 463

Aeronautics :

Aeronautical and Automobile Engineering, College of, 57
Aircraft Constructors, British Society of, 58
Aircraft Flight Indicator, 359
Armstrong Siddeley "Viper" Jet Engine, 405
Bristol "Thesus" Propeller-Driven Engines, Overhaul Life of, 228
"Fairey 17" Anti-Submarine Aircraft, 107
Gyroscopic Flight Instruments, 383, 459
Helicopter, Ten-Seat, 429
Inspection Procedures for Civil Aircraft, 125, 552
Military Aircraft, British, for Freight Transport, 24
Navigational Aids for Aircraft (Catalogue), 316
Pneumatic Equipment for Aircraft (Catalogue), 456
Runway Layout, Revised, for London Airport, 487
Sperry Zero Reader, 359
Subway for London Airport, 448
"Thesus," Bristol, Propeller-Driven Engines, Overhaul Life of, 228
Tudor Aircraft, Accident to, 463
Turbo-Propeller-Driven Aircraft, Deck Landing of, 35
United States Acceptance of British Airworthiness Certificates, 364
Vickers-Armstrongs 510 Fighter Aircraft, 385
"Viking" Air Liner, Explosion in, 341
"Viper" Jet Engine, Armstrong Siddeley, 405

Agriculture :

Compressed Air for Farm Work (Catalogue), 24
Course on Agricultural Engineering, 57
Electricity Supply to Farms, 143

Alloys. See *Mining and Metallurgy*

Appointments, Awards and Honours :

Beilby Memorial Fund Awards, 364
Engineers and Shipbuilders in Scotland, Institution of, Awards for 1949-50 Session, 318
Junior Institution of Engineers, Awards for 1949-50 Session, 279
Royal Society, Awards for 1950, 438
Scholarships, Schofield Travel, Institution of Production Engineers, Award of, 246
Shipwrights' Company's Awards to Apprentices, 1950, 102

Associations :

Aluminium Development, 280
Aslib, 509
Building Documentation, International Council for, 509
Cement and Concrete, 7
Constructional Steelwork, British, 460
Faraday House Old Students', 397
Film Institute, British, 469
Higher Technological Education for London and the Home Counties, Regional Advisory Association for, 199
Industrial Design, Council of, 105
Internal Combustion Engine Research, British, 232
Iron and Steel Research, British, 531
Old Centralians, 20, 334, 464
Old N'ions, 373
Petroleum Equipment, British Manufacturers of, Council of, 35
Petroleum Equipment Industry Standards Committee, 35
Radio Industry Council, 59, 264
Retread Manufacturers', 140
Rubber Development Board, British, 485
Scientific Film, 78
Scientific Instrument Manufacturers', 341
Smoke Abatement Society, 406
Standards Institution, British, 35, 59
Welding Research Association, British, 41

Automobiles. See *Motor Cars, Etc.*

Boilers. See *Engines and Boilers*

Bridges and Viaducts :

Suspension Bridge Across Tacoma Narrows, 486

Buildings and Building Construction :

Bricks, Insulating (Catalogue), 519
Building Documentation, International Council for, 509
"Castellated" Construction for Beams (Catalogue), 120
Civil Engineering and Building Technology, Lectures on, 72
Clinker-Aggregate Building Blocks, 552
Earth-Moving Machinery (Catalogue), 72
Factory Extensions for Glacier Metal Co., Ltd., 280
Factory, Scientific Instrument, for Hilger & Watts, Ltd., 355
Factory, Surplus Government, Transfer to English Electric Co., Ltd., 325
Floors, Granolithic-Concrete, 549

Buildings and Building Construction—*continued.*

Generating Stations, Extensions to, 124, 171, 247, 251, 358, 383, 477, 493, 529
Roofs and Walls, Rapid Construction in Aluminium-Alloy Strip, 50
Runway Layout, Revised, for London Airport, 487
Structural Steelwork, Bolt Adapters for (Catalogue), 579
Structures, Fatigue Strength of, Residual Stresses on, 487

Catalogues :

24, 72, 83, 120, 144, 192, 232, 278, 295, 312, 316, 364, 446, 456, 488, 519, 552, 579
Aabacas Engineering Co., Ltd., 120
Acheson Colloids, Ltd., 232
Acru Electric Tool Manufacturing Co., Ltd., 364
Alexander, G. H., Machinery, Ltd., 232
Aluminium Wire and Cable Co., Ltd., 72
Appleby-Frodingham Steel Co., 120, 144
Armstrong-Siddeley Motors, Ltd., 364
Automatic Telephone and Electric Co., Ltd., 83 (2), 364
Aveling-Barford, Ltd., 72
Barron & Shepherd, Ltd., 24
Beck, O. N., 364
B.E.N. Patents, Ltd., 456
Benjamin Electric, Ltd., 24
Birlec, Ltd., 232
Birmingham Tool and Gauge Co., Ltd., 24
British Aluminium Co., Ltd., 83
British Indicators, Ltd., 278, 295
British Jeffrey-Diamond, Ltd., 72, 552
British Thermostat Co., Ltd., 24
Brooke Tool Manufacturing Co., Ltd., 24
Brown, D., Foundries Co., 120
Brown, D., Machine Tools, Ltd., 72
Brown, D., & Sons (Huddersfield), Ltd., 120
Brush Coachwork, Ltd., 579
Brush Electrical Engineering Co., Ltd., 144, 192
Buffoline Noiseless Gear Co., Ltd., 192
Cellactite and British Uralite, Ltd., 519
Churchill Machine Tool Co., Ltd., 120
Clarke, Chapman & Co., Ltd., 295
Clayton-Wright, H., Ltd., 519
Climax Rock Drill & Engineering Works, Ltd., 364
Clinker Block Manufacturers, Federation of, 552
Crypto, Ltd., 120
Davey, Paxman & Co., Ltd., 72
Dawe Instruments, Ltd., 519, 552
Dewhurst & Partner, Ltd., 364
Dorman, Long & Co., Ltd., 120
Drysdale & Co., Ltd., 488
Edwards, W., & Co. (London), Ltd., 192
Elcontrol, Ltd., 519
Electric Power Engineering Co. (Birmingham), Ltd., 278
Electrical Remote Control Co., Ltd., 552
Euco Tools, Ltd., 488
Everett, Edgecombe & Co., Ltd., 488
Evershed & Vignoles, Ltd., 192
Ferranti, Ltd., 316, 364
Fischer Bearings Co., Ltd., 192
Flexibox, Ltd., 488
Foster Transformers & Switchgear, Ltd., 519
Fox, S., & Co., Ltd., 488
General Electric Co., Ltd., 456, 488, 519, 552
General Refractories, Ltd., 232
Glacier Metal Co., Ltd., 232
Graton & Knight, Ltd., 232
Griffin & Tatlock, Ltd., 120
Hackbridge & Hewittic Electric Co., Ltd., 144, 519
Haskins, 72
Henley's, W. T., Telegraph Works Co., Ltd., 456
High Duty Alloys, Ltd., 83
Hilger & Watts, Ltd. (Watts Division), 72
Holman Brothers, Ltd., 72
Hunslet Engine Co., Ltd., 24
Hymatic Engineering Co., Ltd., 456
International Alloys, Ltd., 83
International Meehanite Metal Co., Ltd., 120
Isopad, Ltd., 488
Jarrow Metal Industries, Ltd., 232
Kent, G., Ltd., 278
Kux Machine Co., 488
Kymatic Engineering Co., Ltd., 24
Lancashire Dynamo & Crypto, Ltd., 72, 295, 488
Light Delivery Vehicles, Ltd., 364
Lindsay, H., Ltd., 579
Lloyds (Burton), Ltd., 519
London Electric Firm, Ltd., 144
Manton Association, Ltd., 278
Metropolitan-Vickers Electrical Co., Ltd., 316, 456, 552 (2), 579 (5)
Mills, J., Ltd., Exors. of, 72
M.K. Electric, Ltd., 488
Morecambe Electrical Equipment Co., Ltd., 83
Morgan Crucible Co., Ltd., 120, 144, 232, 519
Morris, H., Ltd., 552
Muirhead & Co., Ltd., 519
Murex, Ltd., 232
Murex Welding Processes, Ltd., 120
New Insulation Co., Ltd., 519
Northern Aluminium Co., Ltd., 232
Pilot Works, Ltd., 519
Plessey Co., Ltd., 120, 364
Precision Components (Barnet), Ltd., 278, 519
Ransomes & Rapier, Ltd., 278
Rapid Magnet Machines, Ltd., 83
Rawlplug Co., Ltd., 364
Remington Rand, Incorporated, 488

Catalogues—*continued.*

Renold & Coventry Chain Co., Ltd., 446
Rheostatic Co., Ltd., 579
Rich & Pattison (Birmingham), Ltd., 192, 519
Ross River Co., Ltd., 364
Sherwoods Paints, Ltd., 312
Simon-Carves, Ltd., 488
Simon Handling Engineers, Ltd., 72
Sisson, W., & Co., Ltd., 232
Small Electric Motors, Ltd., 192
Soag Machine Tools, Ltd., 488
Spiral Tube & Components Co., Ltd., 519
Standard & Pochin Brothers, Ltd., 519
Sturtevant Engineering Co., Ltd., 519
Sumo Pumps, Ltd., 364
T.I. Aluminium, Ltd., 232
Tomlinson (Electric Vehicles), Ltd., 316
Turner Brothers Asbestos Co., Ltd., 83
United Steel Cos., Ltd., 120, 488
Weir, G. & J., Ltd., 456
Weston, C., & Co., Ltd., 120
Westool, Ltd., 144
Woods of Colchester, Ltd., 519
Zinc Alloy Die Casters Association, 232
Zinc Development Association, 120
Zinc Pigment Development Association, 120

Cement and Concrete :

Granolithic Concrete Floors, 549
Refractory Concrete (Catalogue), 120
Road Construction, Concrete, Questions and Answers on, 7
Roofs, Shell and Barrel, Concrete, 7
Steel Reinforcements for Concrete (Catalogue), 364

Chemistry. See *Physics and Chemistry*

Coal :

Belt Conveyors, Coal-Face (Catalogue), 72
Cardiff, 11, 35, 59, 83, 107, 131, 155, 179, 247, 327, 349, 377, 407, 439, 471, 503, 535, 565
Coke-Oven Plants (Catalogue), 488
Scottish Coal Trade, 11, 35, 59, 83, 107, 131, 155, 179, 247, 327, 349, 377, 407, 439, 471, 503, 535, 565
Sheffield, 11, 35, 59, 83, 107, 131, 155, 179, 247, 349, 377, 407, 439, 471, 503, 535, 565

Colleges. See *Education*

Companies :

A.B.C. Coupler and Engineering Co., Ltd., 56
Addison Electric Co., Ltd., 98
Algar, Ltd., 131
Aluminium Company of Canada, 565
Armstrong Siddeley Motors, Ltd., 405
Associated Commercial Vehicles, Ltd., 243
Ateliers de Constructions Electriques de Charleroi, 401, 493
Bakelite, Ltd., 323
Barlow Whitney, Ltd., 392
Benjamin Electric Co., Ltd., 192
Big Six Film Unit, 56, 116, 418
Blackburn & General Aircraft, Ltd., 24
Boyle, A. S., & Co., Ltd., 462
Bristol Engine Co., Ltd., 228
British Central Electrical Co., Ltd., 392
British Insulated Callenders Cables, Ltd., 131
British Thomson-Houston Co., Ltd., 533
British Timken, Ltd., 76
Brown, D., Machine Tools, Ltd., 161
Brush Electrical Co., Ltd., 572
Bushing Co., Ltd., 263
Cammell Laird & Co., Ltd., 192
Channel Conduits (1949), Ltd., 392
Chapman & Hall, Ltd., 573
Cleaver-Hulme Press, Ltd., 340
Courtaulds, Ltd., 325
Decca Navigator Co., Ltd., 150
Dempster, R., & Sons, Ltd., 50
Deritend Precision Castings, Ltd., 118
Dunlop Rubber Co., Ltd., 124, 336
Edwards, W., & Co. (London), Ltd., 140
Electric Construction, Ltd., 392
Elliott Brothers (London), Ltd., 429
English Electric Co., Ltd., 98, 325
Fairey Aviation Co., Ltd., 35, 107
Ferranti, Ltd., 245
General Electric Co., Ltd., 253, 324, 452
Glacier Metal Co., Ltd., 280
Hanovia, Ltd., 243
Hay's Wharf, Ltd., Proprietors of, 400
Hilger & Watts, Ltd., 355
Howard, E. R., Ltd., 462
Imperial Chemical Industries, Ltd., 34
Jenolite, Ltd., 577
Kerry's (Great Britain), Ltd., 232
Marley, W. H., & Co., Ltd., 107
McGraw-Hill Publishing Co., Ltd., 116
Merlin Film Co., Ltd., 194
Metal Sections, Ltd., 50
Metropolitan-Vickers Electrical Co., Ltd., 532
Mills, J., Ltd., Exors. of, 117
Mond Nickel Co., Ltd., 168
Mullard Electronic Products, Ltd., 458
Murex, Ltd., 499
New Insulation, Ltd., 418
North British Locomotive Co., Ltd., 116
Olding, J., & Co., Ltd., 101
Petters, Ltd., 118
Plessey Co., Ltd., 131
Pressed Steel Co., Ltd., 194
Protolite, Ltd., 499
Provincial Exhibitions, Ltd., 406
Quasi-Arc Co., Ltd., 397, 491
Radiovision Parent, Ltd., 280
R.F.D. Co., Ltd., 199
Rolls-Royce, Ltd., 101

Companies—*continued.*

Rubery Owen Kepston, Ltd., 488
Ruston & Hornsby, Ltd., 569
Sanders, W., & Co. (Wednesbury), Ltd., 392
Scrivener, A., Ltd., 81
Shell Chemical Manufacturing Co., Ltd., 35
Shell-Mex & B.P., Ltd., 452
Short Brothers, Ltd., 424
Sigmund Pumps, Ltd., 35
Simkin Marshall, Ltd., 391
Simon, H., Ltd., 34
Simon Handling Engineers, Ltd., 34
Sperry Gyroscope Co., Ltd., 359, 383, 459
Standard Telephones & Cables, Ltd., 256
Stanton Ironworks Co., Ltd., 194
Taylor Woodrow Construction, Ltd., 448
Tube Investments, Ltd., 50
Unicorn Head Visual Aids, Ltd., 118
Vickers-Armstrongs Ltd., 101, 385
Westland Aircraft, Ltd., 429
Wolf Electric Tools, Ltd., 392
Wota, Ltd., 56

Concrete. See *Cement and Concrete*

Contracts :

11, 35, 59, 107, 131, 164, 223, 256, 348, 376, 406, 438, 470, 502, 534, 564
Aberdare Cables, Ltd., 256
Aberfern Cable & Construction Co., Ltd., 256
A.C.V. Sales, Ltd., 35
Associated Electrical Industries (India), Ltd., 164
Babcock & Wilcox, Ltd., 438
Balfour Beatty & Co., Ltd., 376
Blythswood Shipbuilding Co., Ltd., 564
Braithwaite & Co., Engineers, Ltd., 348, 534
Brightside Foundry & Engineering Co., Ltd., 11
British Electric Transformer Co., Ltd., 502
British Insulated Callender's Cables, Ltd., 11, 376
British Insulated Callender's Construction Co., Ltd., 376, 438
British Polar Engines, Ltd., 406, 470
British Thomson-Houston Co., Ltd., The, 59, 470, 502
Brush Electrical Engineering Co., Ltd., The, 35
Burntisland Shipbuilding Co., Ltd., The, 406
Butterley Co., Ltd., 35
Caledon Shipbuilding & Engineering Co., Ltd., The, 502
Cleveland Bridge & Engineering Co., Ltd., 438
Contractor Switchgear, Ltd., 502
Corrie, J. B., & Co., Ltd., 35
Cravens Railway Carriage & Wagon Co., Ltd., 376
Crompton Parkinson, Ltd., 564
Crossley Brothers, Ltd., 406
Davy and United Engineering Co., Ltd., 223
Distington Engineering Co., Ltd., 59, 470
Dorman, Long & Co., Ltd., 502
Duple Motor Bodies, Ltd., 35
English Electric Co., Ltd., 11, 438
Ferguson Brothers (Port-Glasgow), Ltd., 534
Ferguson, Pailin, Ltd., 164, 376
Film Cooling Towers (1925), Ltd., 11
Fletcher & Co. (Contractors), Ltd., 35, 59, 406
Fraser & Chalmers Engineering Works, The, 376
General Electric Co., Ltd., The, 256, 376 (2), 438 (2), 502
Gilkes, G., & Gordon, Ltd., 534, 564
Hall, Russell & Co., Ltd., 107
Holloway Bros. (London), Ltd., 438, 502
Hunslet Engine Co., Ltd., The, 534
Johnson & Phillips, Ltd., 11
Jones, T. C., & Co., Ltd., 406
Kier, J. L., & Co. (London), Ltd., 107
Kincaid, J. G., & Co., Ltd., 406, 502
Leyland Motors, Ltd., 348
Maley & Taunton, Ltd., 564
Marconi's Wireless Telegraph Co., Ltd., 107, 564
Mark, A., & Co., Ltd., 502
McAlpine, Sir R., & Sons, Ltd., 11, 107, 376
McAlpine, Sir R., & Sons (Newcastle-upon-Tyne), Ltd., 107
Meadows, H., Ltd., 107
Mellowes & Co., Ltd., 406
Metropolitan-Vickers-Beyer, Peacock, Ltd., 406
Metropolitan-Vickers Electrical Co., Ltd., The, 59, 348, 376, 406, 470, 534
M'Lean & Co., 35
Moline Power Implement Co., 107
Morgan, J. (Builders), Ltd., 107
Nott, Brodie & Co., Ltd., 59
Parsons, C. A., & Co., Ltd., 11, 502
Reyrolle, A., & Co., Ltd., 438
Roberts, C., & Co., Ltd., 564
Short & Harland, Ltd., 348
Simon-Carves, Ltd., 131
Small Electric Motors, Ltd., 131
South Wales Switchgear, Ltd., 256
Standard Telephones & Cables, Ltd., 223
Stephen, A., & Sons, Ltd., 59
Stewarts & Lloyds, Ltd., 11
Taylor Woodrow Construction, Ltd., 11
Vickers-Armstrongs Ltd., 11, 256, 376 (3), 438, 502
Ward, T. W., Ltd., 348
Watsham's, Ltd., 438
Watson, W. & J. R., Ltd., 376
Woodhall-Duckham Vertical Retort & Oven Construction Co. (1920), Ltd., 502
Wright, Anderson & Co., Ltd., 11
Yorkshire Hennbique Contracting Co., Ltd., 11

Cranes and Conveyors :

Chain Conveyors, Longwall Scraper (Catalogue), 552
Chain Conveyors, Overhead (Catalogue), 552
Hoists and Cranes (Catalogue), 120
Mechanical Handling Equipment, Electrical Apparatus for (Catalogue), 579
Steel Chains for Conveyors and Elevators (Catalogue), 446

Education :

Aeronautical and Automobile Engineering, College of, 57
Apprenticeships in Plant Engineering, 50; at Hay's Wharf, Ltd., 400; at Brush Electrical Engineering Co., Ltd., 572
Birmingham University Course in Engineering Production, 6
Brixton School of Building, 72
Careers in Engineering Division, British Broadcasting Corporation, 245
Conference, Properties of Semi-Conducting Materials, 76; Scientific Method in Industrial Production, 128; Calculating Machines, 151
Convention on Current Researches in Electron Valves, 355
Courses, Engineering Production, 6; Agricultural Engineering, 57; Foremen and Supervisors, 98; Metallurgy, and Mechanical and Chemical Engineering, 124; Works and Plant Engineers, 139; Evening Classes for Engineers, 247, 251; Evening Classes in Electrical Engineering, 252; Foundry Technology, 359; Various, 499; Technical Librarians, 533
Dartmouth Cadetships, Age Limits for, 544
Discussion on Heat Insulation, 336
Engineering Education in London and Home Counties, 199
Engineering Production, Post-Graduate Course in, 6
Faraday House Old Students' Association, 397
Hatfield Memorial Lecture, 242
Higher Technological Education for London and Home Counties, Regional Advisory Council for, 199
Laboratory Technicians, Proficiency Certificates for, 139
Lectures, Christmas, on Waves and Vibrations, 452; on Railways, 512; on Electric Current, 520, 574
Lectures, Civil Engineering and Building Technology, 72; Trotter-Paterson Memorial, 276; Richard Mitchell Memorial, 278; Electricity Supply in France, 323; Design of Welded Structures, 491; Study of Drying, 499; Nuclear Power, 562
National Foundry College, Courses at, 359
Northampton Polytechnic, 247
Polish University College, 464
Probationer Students, Institute of Marine Engineers, 562
Registration of Lighting Engineers, 569
Scholarships, Society of British Aircraft Constructors, 58; Schofield Travel, Institution of Production Engineers, 246; Marine Architecture and Marine Engineering, 569
Shipwrights' Company's Awards, 1950, 102
Sir John Cass College, Courses at, 251, 499
South East London Technical College, Courses at, 252
Summer School, Electrical-Resistance Strain-Gauge Methods, 130
Symposium on Alloys for Gas Turbines, 242
Vacation School on Control of Electrical Machines, 199
Welding, Arc, Instruction in, 397

Electricity :

Ammeters, Clip-On, 245
Amplifier, Time-Base, and Cathode-Ray Tube Unit, Combined, 458
Apparatus, Electric, for Mechanical-Handling Equipment (Catalogue), 579
Asbestos, Uses in Electrical Industry (Catalogue), 83
Battery Chargers for Electric Vehicles (Catalogue), 519
Bold, St. Helens, New Power Station at, 5
British Broadcasting Corporation, Careers in Engineering Division, 245
Cables, Electric, and Distribution Equipment (Catalogue), 456
Cables, Tracing by Induction, 98
Cathode-Ray Tube Unit and Time-Base Amplifier, Combined, 458
Circuits, Light-Duty, Accessories for (Catalogue), 488
Commutator Grinding Stones (Catalogue), 519
Control of Electrical Machines, Vacation Course on, 199
Control Equipment (Catalogue), 552
Control, Remote, Equipment (Catalogue), 552
Current, Electric, Christmas Lectures on, 520, 574
Droitwich Broadcast Transmitter, Increase in Power, 4
Electrical Apparatus Exhibition, 392
Electrical Equipment (Catalogue), 579
Electrical Equipment, Transfer of Surplus Government Factory to Production of, 325
Electrical Resistance Strain-Gauge Methods, Cambridge Summer School on, 130
Electronic Systems for Stopping Fuel Supply to Furnaces (Catalogue), 519
Evening Classes in Electrical Engineering, 252
Fans, Axial-Flow, Electrically-Driven (Catalogue), 519
Fans, Electric (Catalogue), 192
Farms, Electricity Supply to, 143
Finishes for Radio Equipment, 264
Fires, Electric (Catalogue), 364
France, Electricity Supply in, Lecture on, 323
Furnaces, Heat-Treatment, Electric (Catalogue), 232
Generatng Station at Bold, St. Helens, 5
Generating Stations, Development of, 58, 124, 171, 247, 251, 358, 383, 477, 493, 529

Electricity—*continued*.

Guards for Machines, Photo-Electric, 280
Heater, Induction, High-Frequency, 452
Heaters, Surface (Catalogue), 488
Heating Elements for Industrial Applications (Catalogue), 552
Induction, Tracing Cables by, 98
Lamps and Fittings, Electric (Catalogue), 316
Lamp Fitting, Vapour-Tight, 532
Lamps, Fluorescent, Improved Operation of, 533
Lamps, Glass for (Catalogue), 552
Lamp, 1-kW Mercury-Vapour, 253
Lighting Engineers, Registration of, 569
Lighting Fittings, Domestic and Commercial (Catalogue), 519
Lighting Fittings, Street, Raising and Lowering Gear for (Catalogue), 144
Lighting, Fluorescent, Fittings for (Catalogue), 24
Lighting Installation in Marine-Engine Workshop, 192
Load, Electrical, Spreading in 1950-51, 78
Loch Fannich Hydro-Electric Scheme, 485
Mines, Electricity in, Brochure on, 401
Motors and Alternators, Electric (Catalogue), 72
Motors, Electric (Catalogue), 488
Motors, Induction, Flameproof (Catalogue) 144
Motors, Traction, Small (Catalogue), 192
Mucomir Hydro-Electric Scheme, 433
North of Scotland Hydro-Electric Board, 485
pH Meter, Direct-Reading (Catalogue), 552
Photo-Electric Machine Guards, 280
Photometer, Direct-Reading, Portable (Catalogue), 488
Radar Equipment, Marine, 150
Radio Components, Standard Specifications for, 59
Radio Equipment, Finishes for, 264
Radio-Isotope Applications, Instruments and Accessories for, 341
Radio Transmitter, 50-Watt Fixed Station, 131
Raising and Lowering Gear for Street Lighting Fittings (Catalogue), 144
Recorder, High-Speed, for Electrical Signals (Catalogue), 519
Rectifiers, Glass-Bulb (Catalogue), 144
Rectifiers, Mercury-Arc (Catalogue), 579
Rectifiers, Steel-Tank, Air-Cooled (Catalogue), 456
Relays, Instantaneous, for Protective Systems (Catalogue), 579
Rossecote Generating Station, Development of, 58
Schering Bridge Circuit Layout (Catalogue), 519
Schering Bridge for High-Voltage Laboratory, *Erratum*, 263
Scotland, Electricity Supply to, 520
Solenoids, Alternating-Current (Catalogue), 144
Sound Equipment (Catalogue), 488
Starting Equipment for Electric Motors (Catalogue), 83
Summator for Registering Station Output (Catalogue), 579
Switch, Double-Pole Rotary (Catalogue), 519
Switch, Fuse, Metal-Clad (Catalogue), 519
Switches, Limit, for Electrical Control Systems (Catalogue), 364
Switch, Pressure-Control (Catalogue), 24
Switchgear, Heavy Industrial, 192
Tap Changers, On-Load, for Transformers (Catalogue), 456
Telecommunications, Relays for (Catalogue), 83
Telegraphy, Submarine, Centenary of, *Errata*, 333
Telephone Equipment, Automatic, for Ships (Catalogue), 364
Telephone Equipment, Three-Channel Carrier for (Catalogue), 83
Television Components (Catalogue), 364
Television Link, Manchester to Edinburgh, 256
Tensor Club of Great Britain, Formation of, 7
Torch, Fluorescent, 243
Tractors, Battery-Electric (Catalogue), 579
Transformers, On-Load Tap Changers for (Catalogue), 456
Transmitter, Broadcast, Droitwich, Increase in Power, 4
Trucks, Electric, for Factories (Catalogue), 316
Valves, Electron, Convention and Current Researches on, 355
Valves, Electronic, Industrial, 324
Valves, Radio (Catalogue), 519

Engines and Boilers :

Boiler Feed-Water, Evaporating and Distilling Plants for (Catalogue), 456
Early Steam Engines, Film Strips of, 118
Fans, Boiler (Catalogue), 519
Steam Engines (Catalogue), 232

Errata and Addenda :

"Aircraft Gyroscopic Flight Instruments," 459
Centenary of Submarine Telegraphy, 333
Development of Gas Turbine, 569
High-Pressure Boiler Plant for Imperial Chemical Industries, Ltd., 34
Industrial Gas Turbines, 57
"Modern Workshop Technology," Part II, 340
"Popular Fallacies," 391
"Rigid-Frame Bridge," 573
Schering Bridge for High-Voltage Laboratory, 263
Stiffness of Crankshafts of Commercial Oil Engines, 232
Symposium on Tapered-Roller Bearings, 186
Third Year of Nationalised Coal, 71

Exhibitions :

Analytical Chemistry, at Science Museum, 154
Electrical Apparatus, 392
Festival of Britain, 105

Exhibitions—*continued*.

Fuel Efficiency, Manchester, 406
Lyons Fair, 264
Machine Tools, 232
Petrol Engines, Petters, Ltd., 118
Plastics, Glasgow, 323
Productivity, Birmingham, 525
Railcar Equipment, 243
Wheelwrights' Shop, at Science Museum, 412

Explosions. See *Accidents*

Explosives. See *Guns and Explosives*

Gas :

Lighting Engineers, Registration of, 569

Gas and Oil Engines :

Blading Alloy for Gas Turbine, 168
Crankshafts of Commercial Oil Engines, Stiffness of, *Errata*, 232
Decarbonising Solutions for Components of Internal-Combustion Engines, 577
Diesel Engines (Catalogue), 72
Diesel Engines, Twin-Cylinder (Catalogue), 364
Jet Engine, Armstrong Siddeley "Viper," 405
Petrol Engines, Mobile Exhibition Unit, 118
Turbine Engines, Propeller, "Theseus," 228
Turbines, Gas, Alloys for, Symposium on, 242
Turbines, Gas, Industrial, *Errata*, 57
Turbine, Gas, Ruston & Hornsby, 569

Hydraulics :

Cropper, Hydraulic Power (Catalogue), 519
Pumps, Standardised, Hydraulic, 120

Industries and Commerce :

Aluminium, Canadian Supplies for Britain, 565
Aluminium, Industrial Applications of (Catalogue), 83
Aluminium, Production of, 326
Midland Regional Board for Industry, 525
Swansea Steel-Sheet Industry, 11, 35, 59, 83, 107, 131, 179, 247, 327, 340, 377, 407, 439, 471, 503, 535, 565
Temperature-Control Equipment for Industrial Purposes (Catalogue), 579
Zinc, Allocation Plan for, 535

Institutions. See *Associations*; and *Technical Societies*

Internal-Combustion Engines. See *Gas and Oil Engines*

Iron and Steel :

Bolt Adapters for Structural Steelwork (Catalogue), 579
Cast Iron, Ductile (Catalogue), 519
Cleveland Basic Iron, 11, 35, 59, 83, 107, 131, 155, 179, 247, 327, 349, 377, 407, 439, 471, 503, 535, 565
Cleveland Iron Markets, 11, 35, 59, 83, 107, 131, 155, 179, 247, 327, 349, 377, 407, 439, 471, 503, 535, 565
Cleveland Manufactured Iron and Steel, 11, 35, 59, 83, 107, 131, 155, 179, 247, 327, 349, 377, 407, 439, 471, 503, 535, 565
Cropper, Hydraulic-Power, for Mild-Steel Bars (Catalogue), 519
Hematite and Low-Phosphorus Iron, 11, 35, 59, 83, 107, 131, 155, 179, 247, 327, 349, 377, 407, 439, 471, 503, 535, 565
High-Tensile and Heat-Resisting Steel Castings (Catalogue), 120
Iron- and Steel-Works Products (Catalogue), 120
Ironwork, Ornamental (Catalogue), 72
Mechanite Metal Iron Castings (Catalogue), 120
Middlesbrough Scrap, 11, 35, 59, 83, 107, 131, 155, 247, 327, 349, 377, 407, 439, 471, 503, 535, 565
Protection of Iron and Steel Against Rust (Catalogue), 312
Rusting, Standards of, for Steelwork, 531
Scottish Iron and Steel Trade, 11, 35, 59, 83, 107, 131, 155, 179, 247, 327, 349, 377, 407, 439, 471, 503, 535, 565
Sheffield Iron and Steel Trade, 11, 35, 59, 83, 107, 131, 155, 179, 247, 349, 377, 407, 439, 471, 503, 535, 565
Steel Alloys Containing Lead (Catalogue), 488
Steel Chains for Conveyors and Elevators (Catalogue), 446
Steel Reinforcement for Concrete (Catalogue), 364
"Structural Steel Design, Examples in," Brochure on, 469
Swansea Steel-Sheet Industry, 11, 35, 59, 83, 107, 131, 179, 247, 327, 349, 377, 407, 439, 471, 503, 535, 565

Labour Questions. See *Trade Societies, Etc.*

Lighting. See *Electricity* and *Gas*

Literature. See LITERATURE INDEX

Locomotives. See *Railways and Locomotives*

Machine and Other Tools :

Angles of Lathe Tools, Tool for Measuring, 107
Collars, Spacing, for Milling Machines (Catalogue), 488
Engineers' Small Tools (Catalogue), 24
Gear Shaving and Hobbing Machines (Catalogue), 72
Grinding Machines, Tool and Cutter (Catalogue), 120
Machine-Tool Exhibition, 232
Presses, Tablet (Catalogue), 488
Tungsten-Carbide Tipped Tools, "Betaloy" (Catalogue), 24
Worm Cutting on Hobbing Machines, 101

Marine Engineering. See *Engines and Boilers*; and *Ships and Shipbuilding*

Mining and Metallurgy :

Alloy, Aluminium, Castings, Heat Treatment of, 131
Alloy, Aluminium, High-Duty, Stampings of (Catalogue), 83
Alloy, Aluminium-Strip, for Roof and Wall Construction, 50
Alloy, Aluminium, Wrought (Catalogue), 232
Alloys for Gas Turbines, Symposium on, 242
Alloys, Hard-Facing, Technique of (Catalogue), 488
Alloys, Lead-Steel (Catalogue), 488
Alloy, Light-, Products (Catalogue), 83
Alloy, "Nimonic 90," for Gas-Turbine Blading, 168
Alloys, Stellite, Technique of (Catalogue), 481
Aluminium, Canadian Supplies for Britain, 565
Aluminium in Industry (Catalogue), 83
Aluminium, Production of, 326
Bellby Memorial Awards in Metallurgy, 364
Bronze Bars (Catalogue), 232
Courses in Metallurgy, and Mechanical and Chemical Engineering, 124; Foundry Technology, 359
Die Castings, Zinc-Alloy (Catalogue), 232
End Mills, Heavy-Duty (Catalogue), 232
Foundry Technology, Courses in, 359
Furnaces, Carbon, Blast, Refractories for (Catalogue), 144
Furnaces, Crucible (Catalogue), 232
Furnaces, Heat-Treatment, Electric (Catalogue), 232
Graphite, Colloidal (Catalogue), 232
Heat Treatment of Aluminium-Alloy Castings, 131
"Lost-Wax" Precision Casting of Metals, 118
Metallic Salts (Catalogue), 232
Mines, Electricity in, Brochure on, 401
Mining and Metallurgy, Institution of, Publications of, 155
"Nimonic 90," Gas-Turbine Blading Alloy, 168
Propellers, Marine, in Various Alloys (Catalogue), 232
Sintered Carbide, Film on, 499
Zinc, Allocation Plan for, 535
Zinc Pigments in Rubber (Catalogue), 120

Miscellaneous :

"A.C.E.C. Revue," 401, 493
Air Compressor, Tractor-Mounted (Catalogue), 72
Air-Heating Equipment (Catalogue), 519
"Aircraft Gyroscopic Flight Instruments," Fourth Edition, 383, 459
Aluminium Development Association, Publications of, 280
Asbestos, Uses of (Catalogue), 83
Bearings, Ball and Roller (Catalogue), 192
Bearings, Tapered, for Rolling Stock, 76
Belt Conveyors, Coal-Face (Catalogue), 72
Blowers, Portable (Catalogue), 364
Bulletin of Institution of Mining and Metallurgy, 155
Cable Cleats, Claw-Type, 131
Calculating Machines, International Conference on, 151
Centenary of Exors. of J. Mills, Ltd., 117; Glasgow and South Western Railway, 418; Short Brothers, Ltd., 424
"Centreless Grinding," Publication of Vol. II, 81
"Chartered Marine Engineer," Publication of Institute of Marine Engineers, 562
Concrete Roofs and Roads, Brochures on, 7
Drier, Hand and Face (Catalogue), 120
"Dunlop Aviation Year Book, 1950," 336
End Mills, Heavy-Duty (Catalogue), 232
"Engineers in B.B.C.," Brochure on, 245
Fans, Axial-Flow (Catalogue), 519
Fans, Boiler (Catalogue), 519
Fans, Electric (Catalogue), 192
Film on Bristol Docks, 367
Film-Coupon Scheme, International, 469
Films, Development of, Work of Scientific Film Association, 78
Film of Locomotive Building, "North British," 116
Film on Permali Insulation, 418
Film, Rolling-Stock Couplers, 56
Film on Sintered Carbide, 499
Films, Sound, of Industrial Processes, 194
Film Strips of Steam Engines and Locomotives, 118
Fires, Electric (Catalogue), 364
Fixing Devices (Catalogue), 364
Fuel Efficiency Exhibition, Manchester, 406
Fume Extractor (Catalogue), 364
Furnace Safety Systems (Catalogue), 519
Gauges, Dial, for Low Pressures (Catalogue), 192
Gauge, Vacuum, for Technical Colleges, 140
Gears and Gearing (Catalogue), 192
Glass for Electric Lamps (Catalogue), 552
Good, P., Memorial Service to, 499
Graphite, Colloidal (Catalogue), 232
Grinding Stones for Commutators (Catalogue), 519
Hand and Face Drier (Catalogue), 120
Handling Equipment, Pneumatic (Catalogue), 72
Hay's Wharf, Ltd., "History of Engineering Department," 400
Human Factor in Equipment Design, Symposium on, 183
Israel, Sewerage Scheme for, 135
Laboratory Equipment (Catalogue), 120
Laboratory Technicians, Proficiency Certificates for, 139
Line Standards (Catalogue), 72
Magnetic Equipment for Industrial Purposes (Catalogue), 83
McGraw-Hill Publications, Reprinting in Britain, 116
"Modern Workshop Technology," Part II, *Addenda*, 340
"Mowbray Quay to Pallion Yard, 1850-1950," 424

Miscellaneous—*continued*.

Nineteenth-Century Scientific Instruments, 429
Oils, Pressure, for Gears, 452
Oil Seals (Catalogue), 120
Permali Insulating Material, Film on, 418
Petroleum Equipment, Council of British Manufacturers of, 35
Photographic Reproductions of Catalogues (Catalogue), 488
Plastics Exhibition, Glasgow, 323
Pneumatic Equipment for Aircraft and Automobile Service Stations (Catalogue), 456
Polish, Silicone-Containing, for Motor-Car Bodies, 462
Pump, Borehole, Submersible (Catalogue), 364
Pumps in Chemical Plant, 35
Pump-Control Equipment, Automatic (Catalogue), 192
Pumps, Hydraulic, Standardised (Catalogue), 120
Refractory Materials (Catalogue), 232
Report on Accident to Tudor Aircraft, 463
Report on Accident to "Viking" Aircraft, 341
Rock Drills and Pneumatic Tools (Catalogue), 364
Rubber, Bonded, for Mountings (Catalogue), 519
Rubber Powder for Use on Asphalt Roads, 485. See 186
Rubber Research Centre in Malaya, 124
Rubber-Tyre Retreading, Standard Code for, 140
Rubber, Zinc Pigments in (Catalogue), 120
Rubberised Asphalt Road Surface at Leeds, 186. See 485
Scales, Glass (Catalogue), 72
Scientific Instruments, Early, 429
Sewerage Scheme for Israel, 135
Social Implications of Science, Abstracts on, 74
"Structural Steel Design, Examples in," Brochure on, 469
Timber, Seasoning and Preserving of, 39
Track-Laying Tractor, Heavy, 101
Tractors, Battery Electric (Catalogue), 579
Trolley, Loading, Spring-Compensated (Catalogue), 24
Trucks, Electric, for Factories (Catalogue), 316
V-Belt Pulleys, Pressed-Steel (Catalogue), 232
V-Ropes and Pulleys (Catalogue), 232
Valves and Sprayers, Dust (Catalogue), 519
Welded Structures, Design of, Lectures on, 491
Welding, Arc, Instruction and Practice in, 397
Welding Electrode Holder (Catalogue), 120
Welding Research, Reports on, 41
"Welding Research," Issue of October, 1950, 487
Windows, Aluminium (Catalogue), 232
Woods, Laminated (Catalogue), 519

Motor Cars, Etc.:

Automobile Service Stations, Pneumatic Equipment for (Catalogue), 456
Delivery Van, Light (Catalogue), 364
Motor-Car Bodies, Silicone-Containing Polish for, 462
Motor-Vehicle Tyre Retreading, Code for, 140
Tractor, Fordson, Air-Compressor Mounted on (Catalogue), 72

Naval:

Dartmouth Cadetships, Age Limits for, 544
Standardisation of Naval Operations, 159

Naval. See also *Aeronautics*

Obituary. See GENERAL INDEX

Oil. See *Miscellaneous*

Oil Engines. See *Gas and Oil Engines*

Physics and Chemistry:

Chemical Analysis, Exhibition of Apparatus Used in, 154
Chemical-Proof Clothing, 199
Chemical Society, Research Fund of, 155
Conductors for Overhead Transmission Lines, Physical Properties of (Catalogue), 72
Drying, A Study of, Series of Papers on, 499
Heat Insulation, Joint Discussion on, 336
Nuclear Power, Lectures on, 562
Pumps in Chemical Plant, 35
Semi-Conducting Materials, Properties of, Conference on, 76
Silicone-Containing Polish for Motor-Car Bodies, 462
Temperature-Control Equipment (Catalogue), 579
Vacuum Gauge for Technical Colleges, 140

Power Plants. See *Electricity*

Power Transmission:

Aluminium for Overhead Transmission Lines (Catalogue), 72
Generating Station at Bold, St. Helens, 5
Generating Stations, Extensions to, 58, 124, 171, 247, 251, 358, 383, 477, 493, 529

Railways and Locomotives:

Bearings, Tapered, for Rolling Stock, 76
Brazil, Railway Electrification in, 98
Christmas Lectures on Railways, for Boys, 512
City and South London Railway, 60th Anniversary of, 556
Couplers for Rolling Stock, Film of, 56
Developments on British Railways, 208
Double-Deck Trains, Trials of, 517
Fastenings for Permanent Way (Catalogue), 72
Glasgow and South Western Railway, Centenary of, 418

Railways and Locomotives—*continued*.

Interchange Facilities, Liverpool-Street Station, 424
Locomotive Building, "North British," Film of, 116
Locomotive, Diesel (Catalogue), 24
Locomotives, Early, Film Strips of, 118
Locomotive, Last Ivatt "Atlantic," 340
Railcar Equipment, Exhibition of, 243

Reinforced Concrete. See *Cement and Concrete*

Schools. See *Education*

Sewage and Drainage:

Sewage Expulsion Equipment (Catalogue), 488

Ships and Shipbuilding:

Lloyd's Register Wreck Returns, 253
Marine Engine Shop, Electric-Lighting Installation for, 192
Naval Architects, Institution of, Scholarships of, 569
Propellers, Marine, in Various Alloys (Catalogue), 232
Shipwrights' Company, Awards to Shipyard Apprentices, 1950, 102
Telephone Equipment, Automatic, for Ships (Catalogue), 364

Societies. See *Technical Societies*; and *Trade Societies, Etc.*

Strikes. See *Trade Societies, Etc.*

Technical Societies:

Agricultural Engineers, British, Institution of, 57
Aircraft Constructors, British, Society of, 58
Aslib, 177, 509
Chemical Industry, Society of, 364
Chemical Society, 155
Chemistry, Royal Institute of, 364
Civil Engineers, Institution of, 512
Electrical Engineers, Institution of, 107, 139, 355, 520, 529, 574
Engineers and Shipbuilders in Scotland, Institution of, 318
Ergonomics Research Society, 183
Faraday House Old Students' Association, 397
Fuel, Institute of, 139, 499
Gas Engineers, Institution of, 336
Heating and Ventilating Engineers, Institution of, 139
Illuminating Engineering Society, 276, 569
Industrial Supervisors, Institute of, 98
Iron and Steel Institute, 242
Junior Institution of Engineers, 279
Marine Engineers, Institute of, 261, 562
Mechanical Engineers, Institution of, 139, 447
Metals, Institute of, 57, 364
Mining and Metallurgy, Institution of, 155
Naval Architects, Institution of, 569
Old Centralians, 20, 334, 464
Old Nelsons Association, 373
Physics, Institute of, 130, 139
Physics, International Union of, 76
Plant Engineers, Incorporated, 139
Production Engineers, Institution of, 34, 246
Royal Institution, 452
Royal Society, 76, 438
Standards Institution, British, 35, 59
Statistical Society, Royal, 128
Stoke-on-Trent Association of Engineers, 278
Tensor Club of Great Britain, 7
Works Managers, Institution of, 259

Telegraphy. See *Electricity*

Telephony. See *Electricity*

Tools. See *Machine and Other Tools*

Trade. See *Coal*; *Industries*; *Electricity*; *Iron and Steel*; and *Ships and Shipbuilding*

Trade Societies, Etc.

Absenteeism in Coal-Mining Industry, 140
American Trade Unionists' Visit to Britain, 20
Arbitration, Compulsory, in Trade Disputes, 20, 68, 116, 386
Arbitration Tribunal. See *National Arbitration Tribunal*
Automobile, Aircraft and Agricultural Implement Workers' Union of America, United, Visit of Leaders to Britain, 20
Ballot, Strike-or-Arbitrate, on Engineers' Claims for Wage Increase of 2*d*. a Week, 68
Bans, Overtime, by London Road-Transport Employees, 223
Bans on Piecework, 544
Bell, G., on Industrial Relationships, 92
Blind-Alley Jobs, Dangers of, 164
British Electricity Authority, Risk of Load Shedding Through Working of Saturday Shifts in Mines, 544
British Employers' Confederation, Production Requirements of Government Rearmament Policy, 164
British Overseas Airways Corporation, Strike of Maintenance Electricians at London Airport, 512
British Railways. See *Railway Executive*
Brotherton, H., on Strike-or-Arbitrate Ballot, 68; on Engineers' Wage Claims, 188
Bruce, Lord, on Need for Reducing Costs and Prices in Nationalised Industries, 68
Building Trades Employers, National Federation of, Policy of Full Employment, 44; Incentive Schemes, 574
Building Trades Operatives, National Federation of, Policy of Full Employment, 44; Incentive Schemes, 574
Busmen, London, Unofficial Strike of, 256
Chemical Workers' Union, Need for "Industrial Parliaments," 116

Trade Societies, Etc.—*continued*.

Civil Servants, Statistics of, 544
Clerical and Administrative Workers' Union, Need for Abolition of Compulsory Arbitration, 116
Closed-Shop Ruling by National Arbitration Tribunal, 20; Policy of Durham County Council, 480, 512
Coal Production, Statistics of, 164, 358
Colliery Man-Power Shortage, Concern at, 386
Colliery Winding Enginemen, National Federation of, Call for Strike Ballot, 68; Demand for Seven Days' Strike Notice to National Coal Board, 358
Conditions of Employment and National Arbitration Order, 20, 68, 116
Court of Inquiry into London Printing-Trade Dispute, 223, 386, 416
Court of Inquiry into Railway Wage Dispute, 574
Cripps, Sir S., on Relaxation of Restraint on Wage Increases, 20
Dame Margaret's Hall, County Durham, Opening of, 512
Deakin, A., on Unofficial Strikes, 116
Duple Motor Bodies, Ltd., Strike at Works of, 512
Durham County Council's Closed-Shop Policy, 480, 512
Durham University, Protest Against Closed-Shop Policy of Durham County Council, 480
Economic Survey for 1950, 358, 448
Electrical-Contracting Industry, Wage Increase of 2*d*. an Hour to Journeymen, 68
Electrical Trades Union, Result of Strike-or-Arbitrate Ballot on Engineers' Wage Claims, 68; Request for Reduction in Compensation for Nationalised Industries, 116; Strike of Maintenance Men at London Airport, 512
Electricians, Maintenance, at London Airport, Strike of, 512
Electricity Load Shedding in Coal Mines, 544
Employment, Full, Policy of, 44
Employment Statistics, Ministry of Labour, 92, 164, 544
Engineers' Guild, Protest Against Closed-Shop Policy of Durham County Council, 480
Engineering and Allied Employers' National Federation, Result of Strike-or-Arbitrate Ballot on Engineers' Wage Claims, 68; Engineers' Claims for Wage Increase of 20*s*. a Week, 188, 358, 448; Increases for Women Engineers, 544
Engineering Industry, Increases for Women Operatives, 544
Engineering Union, Amalgamated, Visit of American Trade-Union Leaders to Britain, 20; Need for New Approach to Wage Problems, 44; Strike-or-Arbitrate Ballot, 68; Request for Further Nationalisation of Industry, 116; Wage Claims for Increase of 20*s*. a Week, 188, 358, 448; Effects of Economic Problems, 512; Request for Progressive Repayment of Post-War Credits, 574
Enginemen's Mutual Assurance, Sick and Superannuation Society, Western Region, British Railways, 20, 44
Fares, Increased, for South Wales Miners, Dispute Over, 116, 140, 164
Fawcett, Sir L., on Employment in Building Industry, 44
Federation of British Industries, Production Requirements of Government Rearmament Policy, 164
Figgins, J. B., Appeal to Railwaymen to Await Findings of Court of Inquiry, 574
Finance Corporation for Industry, Lord Bruce on Need for Reducing Costs and Prices in Nationalised Industries, 68
Ford Motor Co., Ltd., Wage Increases to Employees, 448
Foundry Workers, Amalgamated Union of, Result of Strike-or-Arbitrate Ballot on Engineers' Wage Claims, 68
Gaitskell, H., on Repercussions of Government Rearmament Policy, 164
Gardner, B., on Wage Problems, 44
Gas Council, Wage Claims of London Gas Maintenance Men, 256
General Federation of Trade Unions, Comments on Industrial Relationships, 92; Membership Statistics, 92
General and Municipal Workers, National Union of, Opposition to Engineers' Claims for Wage Increases of 20*s*. a Week, 68; Request for Expulsion of Union's Secretary from Confederation of Shipbuilding and Engineering Unions, 68; Dissatisfaction with Structure of Nationalised Industries, 116; Views on Right to Strike, 116
Government Action to Reduce Cost of Living, Need for, 92
Government Factories, Unemployment Arising from Closing of, 92
Government Rearmament Policy, 164
Griffith, G. C., on Agreement in London Printing-Trade Dispute, 416
Hyndley, Lord, on Coal Production, 164, 448
Index of Rates of Wages, 223, 480
Index of Retail Prices, 223, 416, 574
Industrial Administration, Institute of, Dangers of Blind-Alley Jobs, 164
Industrial Disputes. See *Strikes*
Industrial Efficiency, Need for Increase in, 358
Inland Revenue Staff Federation, Demands for Setting up of National Wage Board, 116
Irish Transport and General Workers' Union, Strike on Irish Railways, 574
Iron and Steel Act, Tragedy of, 92, 416
Iron and Steel Industry, Future of, 92; Policy of Labour Party, 188; Tragedy of Unwanted Nationalisation, 416
Iron and Steel Trades Confederation, Comments in *Man and Metal*, 92
Jones, Sir W. B., on Unwanted Nationalisation of Iron and Steel Industry, 416
Labour and New Society, Pamphlet on, 188

Trade Societies, Etc.—*continued*.

Labour Party, Annual Conference at Margate, 92
Labour, Rejection of Proposals to Establish a National Wage Policy, 386
Lever, E. H., on Disposal of Income of R. Thomas & Baldwins, Ltd., 92
Lloyd, R. O., on Employment in Building Industry, 44
Local Government Authorities, Statistics Concerning Employees in, 544
Locomotive Engineers and Firemen, Associated Society of, Western Region Footplate Men's Pension Fund Dispute, 20, 44; Claims for Wage Increases by Lowest-Paid Staffs, 44; Claims for Wage Increase of 15 per Cent., 68, 140, 256, 358, 416, 448, 480; Appointment of Railway Court of Inquiry, 574
London Airport, Strike of Maintenance Electricians at, 512
London Master Printers' Association, London Printing-Trade Dispute, 223, 386, 416
London Society of Compositors, London Printing-Trade Dispute, 223, 386, 416
London Transport Executive, Unrest Among London Road-Transport Employees, 223, 256
Man and Metal, Comments on Unemployment, 92; on Future of Iron and Steel Industry, 92
Metropolitan-Vickers Electrical Co., Ltd., Ban on Piecework, 544
Mineworkers, National Union of, Dispute Over Increased Fares for South Wales Miners, 116, 140, 164; Need for Increased Coal Production, 164; Winding Enginemen's Dispute, 358; Strike of Scottish Miners, 358; Concern at Man-Power Shortage, 386; Appeals for Working of Saturday Shifts, 480, 544; Training Centre for Young Mine Employees, 512; Risk of Electricity Load Shedding, 544
Mining Industry, Coal, Dispute of Colliery Winding Enginemen, 68, 358; Dispute Over Increased Fares Payable by South Wales Miners, 116, 140, 164; Man-Power Statistics, 140; Absenteeism, 140; Coal-Production Statistics, 164, 358; Strike in Scottish Coalfield, 358; Decline in Colliery Man-Power, 386; Need for Increased Coal Production, 448; Government Decision to Buy Coal from Abroad, 448; Appeals for Working of Saturday Shifts, 480, 544; Training Centre for Young Mine Employees, 512; Risk of Electricity Load Shedding, 544
National Arbitration Tribunal, Closed-Shop Ruling, 20; Investigation of Engineers' Wage Claims for Increase of 20*s*. a Week, 358, 448; Dispute at Hendon Works of Duple Motor Bodies, Ltd., 512
National Coal Board, Failure to Recognise Colliery Winders' Federation, 68; Dispute Over Increased Fares for South Wales Miners, 116, 140, 164; Need for Increased Coal Production, 164, 448; Notice by Colliery Winding Enginemen of Proposed Strike Action, 358; Decline in Colliery Man-Power, 386; Appeals for Working of Saturday Shifts, 480, 544; Residential Training Centre for Young Mine Employees, 512; Risk of Electricity Load Shedding, 544
National Consultative Council for Coal Industry, 164
National Joint Negotiating Committee for the Tobacco Industry, 20
Nationalisation, Request for Extension to Other Industries, 116
Nationalised Industries, Need for Reducing Costs and Prices in, 68; Dissatisfaction with Administration of, 116; Tests Indicating Suitability of Industries for Public Ownership, 188; Tragedy of Unwanted Nationalisation of Iron and Steel Industry, 416
Noel-Baker, P., on Coal Production, 358; on Decline in Colliery Man-Power, 386; on Government Decision to Buy Coal from Abroad, 448
North Thames Gas Board, Wage Claims of London Gas Maintenance Men, 256
Overtime Bans by London Road-Transport Employees, 223
Pension and Mutual Assistance Fund Dispute in Western Region of British Railways, 20, 44
Personal Incomes, Costs and Prices, White Paper on, 20, 512
Piecework, Bans on, 544
Post-War Credits, Appeal for Progressive Repayment, 574
Potter, W. T., on Increases in Railwaymen's Wages, 44
Prices and Profits, Proposals for Reduction of, 386
Printing and Kindred Trades Federation, London Printing-Trade Dispute, 223, 386, 416
Printing Trade, London, Dispute in, 223, 386, 416
Public Employees, National Union of, Constitution of Trades Union Congress, 188
Railway Clerks' Association, Claims for Wage Increases for Lowest-Paid Staffs, 44; Claims for Wage Increase of 7½ per cent., 68, 140, 256, 358, 416, 448, 480; Criticism of British Transport Commission, 116; Appointment of Railway Court of Inquiry, 574
Railway Executive, Western Region Footplate Men's Pension Fund Dispute, 20, 44; Claim for Wage Increases Against, 44, 68, 140, 256, 358, 416, 448, 480; Appointment of Railway Court of Inquiry, 574
Railways, Irish, Strike on, 574
Railway Man-Power, Economies in Use of, 480
Railway Review, Appeal to Railwaymen to Await Findings of Court of Inquiry, 574
Railway Staff National Council, Consideration of Wage Claims by, 44, 358, 416, 480, 574

Trade Societies, Etc.—*continued.*

Railway Staff National Tribunal, 140, 256
Railwaymen, National Union of, Demands for Withdrawal of Conditions of Employment and National Arbitration Order, 20, 116; Claims for Wage Increases for Lowest-Paid Staffs, 44, 68, 140, 256, 358, 416, 448, 480; Morecambe Annual Conference, 44; Demands for Increased Representation in Management, 44; Appointment of Court of Inquiry, 574
Rearmament Policy of Government, 164
Residential Training Centre for Young Mine Employees, 512
Restraint on Wages Increases, Need for, 20
Roberts, B., on Constitution of Trades Union Congress, 188
Roe, A. V., & Co., Ltd., Bans on Piecework, 544
Scottish Brass Turners', Fitters', Finishers' and Instrument Makers' Association, Attitude to Strike-or-Arbitrate Ballot on Engineers' Wage Claims, 68
Scottish Painters' Society, Attitude to Strike-or-Arbitrate Ballot on Engineers' Wage Claims, 68
Shawcross, Sir H., on Need for Increased Industrial Efficiency, 358
Shipbuilding and Engineering Unions, Confederation of, Attitude to Strike-or-Arbitrate Ballot on Engineers' Wage Claims, 68; Engineers' Claims for Wage Increase of 20s. a Week, 188, 358, 448; Award on Wage Claims of Gas Maintenance Men, 256; Wage Increase for Employees in Shipbuilding Industry, 512

Trade Societies, Etc.—*continued.*

Shipbuilding Employers' Federation, Result of Strike-or-Arbitrate Ballot on Engineers' Wage Claims, 68; Wage Increases for Employees in Shipbuilding Industry, 512
Smithfield Meat Market, Unrest Among Employees, 256
State Employees, Statistics Concerning, 544
Stevedores and Dockers, National Amalgamated Union of, Need for Abolition of Compulsory Arbitration, 116; Wage Claims of Dockers, 256
Strike Statistics, Ministry of Labour, 116, 223, 480
Strikes, Western Region Footplate Men, 20, 44; Unofficial, Consequences of, 116, 256; Democratic Rights of Employees, 116; Gas Maintenance Men, 256; London 'Busmen, 256; Scottish Miners, 358; Colliery Winding Enginemen, 358; Duple Motor Bodies, Ltd., 512; Maintenance Electricians at London Airport, 512; Irish Railways, 574
Thomas, R., and Baldwins, Ltd., Disposal of Income of, 92
Tobacco Workers' Union, Dispute Over Closed Shop, 20
Trades Union Congress, Restraint on Wage Increases, 20; Responsibilities for Welfare of Membership, 20; Annual Congress at Brighton, 116, 512; Repercussions of Rearmament Policy, 164; Condemnation of Constitution, 188; Rejection of Proposals for a National Wage Policy, 386; Proposals for Reduction of Prices and Profits, 386; Resolutions on Economic

Trade Societies, Etc.—*continued.*

Problems, 512; Proposals for New Excess Profits Tax, 512; Request for Progressive Repayment of Post-War Credits, 574
Trade Unions, Membership and Financial Statistics of, 358
Transport Commission, British, Need for Revision of Financial Structure of, 116
Transport and General Workers' Union, Consequences of Unofficial Strikes, 116; Unrest Among London Road-Transport Employees, 223, 256; Request for Implementation of Dockers' Charter, 256
Typographical Association, Wage Increases Granted to Members of, 223
Unemployment, Effects of, 92; Arising from Closing of Two Government Factories, 92; Ministry of Labour Statistics for Great Britain, 92
United States Trade Unionists' Visit to Britain, 20
United Steel Companies, Ltd., Unwanted Nationalisation of Iron and Steel Industry, 416
Verulam, Lord, on Blind-Alley Jobs, 164
Wage Board, National, Demands for, 116
Wages, Restraint on Increases No Longer Workable, 20; Claims of Railway Employees, 44, 68, 256, 358, 416, 448, 480; Need for New Approach to Wage Problems, 44; Increases to Journeymen in Electrical-Contracting Industry, 68; Claims of Colliery Winding Enginemen, 68, 358; Claims of Engineers for 20s. a Week Increase, 68, 188, 358, 448; Printing Trade, 223, 386, 416; Claims of

Trade Societies, Etc.—*continued.*

London Road-Transport Employees, 223, 256; Claims of London Gas Maintenance Men, 256; Dockers' Claims, 256; Compulsory Arbitration for Wage Claims, 386; Ford Motor Co., Ltd., 448; Need for Higher Wages in Coal-Mining Industry, 448; Increases to Employees in Shipbuilding Industry, 512; Increases to Women Engineers, 544
Wage Statistics, Ministry of Labour, 116, 140, 223, 480
White Paper on *Personal Incomes, Costs and Prices*, 20, 512
Williamson, T., on Right to Strike, 116
Women Engineers, Increases in Wage Rates, 544
Woodworkers, Amalgamated Society of, Views on Engineers' Claims for Wage Increase of 20s. a Week, 68; Blackpool Annual Delegate Conference, 256
Working Population, Ministry of Labour, Statistics of, 92, 164, 544
Yorkshire Colliery Winding Enginemen's Association, Call for Strike Ballot, 68; Demand for Seven Days' Strike Notice to National Coal Board, 358

Turbines. See *Engines and Boilers*

Universities. See *Education*

Vehicles. See *Motor Cars, Etc.*; and *Railways and Locomotives*

Warships. See *Naval*